

## **EXHIBIT E**

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| <p>1 Q Have you taught any classes in education?</p> <p>2 A Yes.</p> <p>3 Q What have you taught?</p> <p>4 A Well, I've taught a cross-listed class at UCLA between</p> <p>5 library and information science and education.</p> <p>6 Q And what was the subject matter of that class?</p> <p>7 A It was on my own – my own work on social epistemology which</p> <p>8 has some credibility in these areas.</p> <p>9 Q Do you consider yourself an expert in Intelligent Design?</p> <p>10 A An expert in Intelligent Design. No.</p> <p>11 Q Okay.</p> <p>12 A I'm an expert on the nature of science.</p> <p>13 Q Gotcha. Okay. Do you consider -- do you consider</p> <p>14 yourself -- you said that Intelligent Design is science. I</p> <p>15 think -- I think we can agree, you're basically saying it's</p> <p>16 science but not as far along as some of the other natural</p> <p>17 sciences?</p> <p>18 A Yes.</p> <p>19 Q Okay. Do you consider yourself an expert on the scientific</p> <p>20 content of Intelligent Design?</p> <p>21 A I'm not sure what you mean by that.</p> <p>22 Q Well, let me ask you, let me ask you, what is Intelligent</p> <p>23 Design?</p> <p>24 A What is Intelligent Design? Well, it's an attempt to explain</p> <p>25 actually a vast array of phenomena, not just restricted to</p>  |    | <p>1 understanding the nature of life, that's sort of an extension</p> <p>2 of the idea, because I think we have no problem with</p> <p>3 Intelligent Design with regard to artifacts</p> <p>4 Q And why do you say that?</p> <p>5 A Because humans are the intelligents who are designing the</p> <p>6 things. I mean, we know where it comes from. We actually</p> <p>7 know the causal process in terms of how these things are</p> <p>8 produced.</p> <p>9 Q And how do you understand we come to that knowledge with</p> <p>10 artifacts?</p> <p>11 A How do we come to that knowledge? Well, largely because we</p> <p>12 could do it ourselves. Right. We can actually produce</p> <p>13 these -- we can say -- I can say, look, I'm going to design a</p> <p>14 car. I'm doing it, it's done. Here's the car. And you can</p> <p>15 sort of lay out the steps by which it happens. You can talk</p> <p>16 about the general blueprint, how the blueprint's supplied</p> <p>17 materially to make the thing run and then it works. And so</p> <p>18 you have a complete sense of that causal process there. And so</p> <p>19 that's the kind of paradigm case I would say of</p> <p>20 Intelligent Design.</p> <p>21 Q And am I correct in understanding your testimony from a</p> <p>22 couple minutes ago that that kind of design inference, so to</p> <p>23 speak, is the model for the design inference being used for</p> <p>24 biological life?</p> <p>25 A Yeah, I would say so. I would say that's ultimately what's</p>  |    |
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| <p>1 the origins of life, in terms of some kind of design that was</p> <p>2 put there deliberately. Now, the scope of the theory – the</p> <p>3 scope of this science is potentially quite large. In that</p> <p>4 respect, it's very much like information science, that in a</p> <p>5 way, doesn't have to be restricted to a single domain. So</p> <p>6 it's just not about life. It could be about anything that</p> <p>7 displays this design pattern because machines, obviously,</p> <p>8 have Intelligent Design, right, and they're not forms of</p> <p>9 life. So it is -- in a way, it's kind of almost like a</p> <p>10 second order science, like information theory attempts to be.</p> <p>11 I guess that would be how I would pitch it.</p> <p>12 Q You used -- you know, obviously, the word design is in the</p> <p>13 term Intelligent Design.</p> <p>14 A Yeah, yeah.</p> <p>15 Q What do you mean by design?</p> <p>16 A Well, it's very unlikely that the order that is produced</p> <p>17 would have come about through -- through chance, right, that</p> <p>18 there isn't some sense, some plan there that the order was</p> <p>19 meant to be there. I mean, the model for it in an artifact</p> <p>20 or a machine. Something, obviously, a human has designed.</p> <p>21 mean, that's -- I mean, in that respect, you know, Paley sets</p> <p>22 a kind of benchmark for what the image of the -- of what the</p> <p>23 science is about. And that's why -- that's the -- sort of</p> <p>24 the natural way to understand this. And then with all the</p> <p>25 stuff that's going on now with Intelligent Design</p> |    | <p>1 being aimed at. Yes.</p> <p>2 Q Here's what I don't understand. And maybe you can help clear</p> <p>3 this up for me. You explained how we understand design of</p> <p>4 human artifacts from the -- and you said, you know, we can</p> <p>5 understand it because we can do it, right? How does that</p> <p>6 provide a model for design of biological life?</p> <p>7 A Well, I think the best way to think about this is in fact</p> <p>8 with what -- imagine computer simulations which, you know,</p> <p>9 are increasingly in the biological sciences when we're trying</p> <p>10 to project backward into how life began, where, you know, we</p> <p>11 have recourse -- we of course have recourse to fossils to a</p> <p>12 certain extent. We can get some sense of what life was like</p> <p>13 in the beginning that way. And we can do some DNA testing on</p> <p>14 that. But increasingly we have to rely on computer</p> <p>15 simulations. And computer simulations are design functions,</p> <p>16 right, where you're programming a system to behave in a</p> <p>17 certain way, and then you see what the outcomes are. And you</p> <p>18 say, well, okay, let's say that I imagine that the world was</p> <p>19 designed with these three or four parameters that interact in</p> <p>20 a certain way according to a computer program I can</p> <p>21 specialize -- specify. Well, that then produced the world as</p> <p>22 we know it. Okay. If it does, right, that's a good argument</p> <p>23 for design, it seems to me. If not, you know, back to the</p> <p>24 drawing board. But the point is we're already doing stuff in</p> <p>25 science where we're actually engaged in design like</p> |    |

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| <p>1 activities.</p> <p>2 Okay. So I don't think it's so far-fetched in</p> <p>3 principle, especially in the period in which we're living,</p> <p>4 where we're doing more and more of our science on computer</p> <p>5 programs which requires that the scientist actually design</p> <p>6 the situation in which the phenomenon is going to manifest</p> <p>7 itself. I mean, so I -- I don't see -- I don't see quite the</p> <p>8 problem in principle here.</p> <p>9 Q Well, why would the fact that humans can design a model lead</p> <p>10 us to any conclusions about what a non-human, non-natural</p> <p>11 actor can do in terms of creating some form of biological</p> <p>12 life?</p> <p>13 A Well, just stated that way, sure. You're absolutely right.</p> <p>14 But that's not -- that's not the whole story, right? In</p> <p>15 fact, you know, this is where one -- I mean, the point is</p> <p>16 that even people who don't consider themselves proponents of</p> <p>17 Intelligent Design are in fact, you know, playing around with</p> <p>18 models that, in a sense, put them in the position of</p> <p>19 potential designers of universes. Okay. So in a sense,</p> <p>20 science is moving in a design oriented direction already.</p> <p>21 It's just the people doing it who, let's say, do complexity</p> <p>22 theory and stuff like that don't like to call it Intelligent</p> <p>23 Design. But in a sense, they're adopting the standpoint, you</p> <p>24 know, that would seem to me ultimately Intelligent Design is</p> <p>25 trying to work itself back to. That's why so many of these</p>  |    | <p>1 A Yeah. I mean Dembski and Behe. That is to say, not the high</p> <p>2 school textbooks.</p> <p>3 Q Okay. So let's just be clear what you mean. And let me ask</p> <p>4 this in a couple of -- a couple questions about this. First</p> <p>5 of all, you said you're not -- you don't hold yourself out as</p> <p>6 an expert in the content, the scientific content of</p> <p>7 Intelligent Design, is that right?</p> <p>8 A We haven't gotten back to what you mean by that yet. Can</p> <p>9 you -- you just threw the question back at me. So what do</p> <p>10 you mean by scientific content?</p> <p>11 Q Well, okay, fair enough. What do you understand to be the</p> <p>12 core propositions of Intelligent Design as it applies to</p> <p>13 living things, biological life?</p> <p>14 A What do I understand them to be?</p> <p>15 Q Yes.</p> <p>16 A Well, it depends which -- these guys don't all hold the same</p> <p>17 views exactly. Okay. That's the first point, right?</p> <p>18 Intelligent Design is, in a sense, kind of a covering term</p> <p>19 for a lot of overlapping theories, you might say. I mean,</p> <p>20 there is this business of -- I mean, that Behe emphasizes of</p> <p>21 the irreducible complexity of cellular life. But then</p> <p>22 there's also the business with Dembski and the idea of design</p> <p>23 as a kind of explanatory filter that is not as probable as</p> <p>24 just mindless natural regularity, but not as improbable as</p> <p>25 chance. So these are kind of general notions that these guys</p>  |    |
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| <p>1 arguments are arguments that, in a sense, are meant to be</p> <p>2 conducted on computers under mathematical terms. It's not</p> <p>3 it's not -- the old -- it is true that with Paley and a lot</p> <p>4 of these old guys, there is some kind of analogy which is</p> <p>5 parasitic on the idea that, you know, human beings are made</p> <p>6 in the image and likeness of God. So if humans can do it,</p> <p>7 then God can do it kind of in a bigger way. I understand</p> <p>8 that, and that's the theological basis for the design</p> <p>9 argument. But it seems to me now with science, we've got</p> <p>10 sort of -- we're now in a situation where the way we actually</p> <p>11 do science is one where we're in the design position, and</p> <p>12 we're kind of doing the sorts of things that let's say a</p> <p>13 creator would do if they were simulating a universe. And so</p> <p>14 I don't see the -- you know, so it's sort of a different</p> <p>15 basis for making the inference. Now, whether you're going</p> <p>16 to -- you know, I mean, I would suppose the tough question</p> <p>17 whether there would ever be any kind of empirical way of</p> <p>18 resolving whether a simulated universe designed by a human</p> <p>19 being, to say this is how the world happened, could ever be</p> <p>20 proven empirically. And I don't know if that could happen.</p> <p>21 But then again, evolution's stuck with that problem, too.</p> <p>22 Everybody's kind of stuck with that problem.</p> <p>23 Q One of the things you say on the first page of your report is</p> <p>24 my expertise experts to a consideration of ID in its most</p> <p>25 developed forms.</p> |    | <p>1 are working with as providing constraints on the possibility</p> <p>2 for life. Okay. And they're coming at it from somewhat</p> <p>3 different directions. So, I mean, that's what -- at least</p> <p>4 that's what I understand to be distinctive about the</p> <p>5 position, right, in the sense it makes it different from what</p> <p>6 evolutionists are saying.</p> <p>7 Q Okay. So if -- the answer to the question, you know, what is</p> <p>8 ID comprised of from a scientific standpoint is Behe's notion</p> <p>9 of irreducible complexity?</p> <p>10 A Yeah. And Dembski's explanatory filter. And those are the</p> <p>11 basic explanatory principles, the fundamental ones that are</p> <p>12 being developed now, it seems to me.</p> <p>13 Q Other than those two explanatory principles, are you aware of</p> <p>14 any other explanatory principles that are part of the</p> <p>15 Intelligent Design as a scientific concept?</p> <p>16 A Well, I would say at this level of generality, those are the</p> <p>17 main ones. I mean, there's -- Meyer has this sort of an</p> <p>18 information specification criterion as well. But, you know,</p> <p>19 if you were to look at any given science, you'd only come up</p> <p>20 with about two or three fundamental principles for any of</p> <p>21 them any way. So the fact that there aren't a whole lot of</p> <p>22 them, and they all seem to overlap or have something in</p> <p>23 common, that itself is not prejudicial, it seems to me.</p> <p>24 Q I'm not characterizing. I just want to make sure I</p> <p>25 understand what you understand Intelligent Design to be.</p> |    |

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| <p style="text-align: right;">90</p> <p>1 A Well, creation science was originally an attempt to sort<br/>     2 of -- I mean, I think in light of the Arkansas case, right,<br/>     3 it was seen as a way of trying to bring in these biblical<br/>     4 principles into the science classroom by making it look as<br/>     5 though there were scientific grounds for holding what turned<br/>     6 out to be biblical beliefs. And so sometimes fossils would<br/>     7 be appealed to, sometimes they would be dismissed out of<br/>     8 hand, depending on what kind of suited the purpose of the<br/>     9 textbook writer. But there was no real clear evidence of any<br/>     10 kind of internal development taking place. It was rather, it<br/>     11 seemed like kind of camouflage strategy. I mean, at least<br/>     12 that seems to be the final verdict on this.</p> <p>13 Q And do you -- to you, Intelligent Design is different than<br/>     14 creation science?</p> <p>15 A Yes, I think so. I think -- not only do I think it's<br/>     16 different, I think also its critics treat it differently.<br/>     17 That is to say, including the critics who don't want to see<br/>     18 it taught.</p> <p>19 Q And in what respects is Intelligent Design different than<br/>     20 creation science?</p> <p>21 A Well, because you, first of all, Intelligent Design actually<br/>     22 more self-consciously draws on these wider traditions of<br/>     23 Western thought from natural theology and onward that have<br/>     24 been marginalized by Darwin which try to deal with larger<br/>     25 questions about the nature of life, and which did have some</p>   | <p>1 see, so all of that I think is indicating that Intelligent<br/>     2 Design is really scientific, and isn't very much reliant<br/>     3 anymore in whatever historical connections it's had with<br/>     4 religion.</p> <p>5 Q If you took Dembski's work away, and you took Behe's work<br/>     6 away, and I understand you're not going to do that. But<br/>     7 would there then be any distinction between Intelligent<br/>     8 Design and creationism?</p> <p>9 A Well, there's Meyer where I --</p> <p>10 MR. GILLEN: Object to form.</p> <p>11 BY MR. ROTHSCHILD, CONTINUING:</p> <p>12 Q Let me just finish. I mean, in other words, if you took Behe<br/>     13 away and you took Dembski away and they'd never written, and<br/>     14 nobody had replaced them, would you have any basis then to<br/>     15 say Intelligent Design has developed in a way that<br/>     16 constitutes science?</p> <p>17 MR. GILLEN: Object to form.</p> <p>18 THE WITNESS: Well, let's see. First of all, we haven't<br/>     19 talked about Meyer's work which I'm not intimately familiar<br/>     20 with. But of course there is that sort of strand there as<br/>     21 well. But I take it you're after -- your -- the thrust of<br/>     22 your question is that, you know, if you took away these three<br/>     23 guys or four guys, or how many, you know, finite number of<br/>     24 guys, would there be any Intelligent Design? I actually<br/>     25 think -- see, we've so far been discussing this issue of</p>  |
| <p style="text-align: right;">91</p> <p>1 kind of, you know, proto-scientific development. Like<br/>     2 Paley's argument and so forth, and then tries to put it in a<br/>     3 more scientifically rigorous form like Dembski's done with<br/>     4 the explanatory filter. And so you do see a development.<br/>     5 And you also -- and in the way in which the critics treat it.<br/>     6 So when the philosophers are debating with Dembski, they<br/>     7 explicitly say, let's put aside his religious assumptions and<br/>     8 just deal with his arguments on their face. And the kinds of<br/>     9 arguments they give, first of all, it's published in their<br/>     10 main peer reviewed journals, in the Glossary of Science in<br/>     11 the United States. And he responds there. And it's an<br/>     12 argument that, you know, they could be having with anyone,<br/>     13 right, who they would normally respect as being scientific<br/>     14 and so forth. And Michael Ruse, when he writes, I mean, he's<br/>     15 an interesting guy to have watched over the last 20 years<br/>     16 since he's writing a book a year on this kind of stuff.</p> <p>17 And, you know, the -- you know, the Darwin End Design, a<br/>     18 book that came out in 2003, there he quite explicitly, when<br/>     19 he discusses Intelligent Design, he makes the connections<br/>     20 with the natural theology tradition, he treats it in a very<br/>     21 kind of respectful manner, and in fact he says that, you<br/>     22 know, these views that these guys are putting forward these<br/>     23 days could be easily confused with kind of respectable<br/>     24 scientific views. And that's something you wouldn't -- they<br/>     25 wouldn't have said 20 years ago about creation science. You</p> | <p>1 Intelligent Design as something that is mutually exclusive<br/>     2 from evolutionary theory. And I understand that because of<br/>     3 the nature of the case we're talking about. But within<br/>     4 evolutionary theory, within evolutionary theorists, there<br/>     5 has -- there have been tendencies in that direction as well.<br/>     6 So it's not like Intelligent Design is something completely<br/>     7 alien to people who we would normally consider to be<br/>     8 contributors to evolutionary theory. I mean, you actually<br/>     9 have people, I cite Theodosius Dobzhansky, for example, who's<br/>     10 one of the founders of the Neo-Darwinian synthesis who's a<br/>     11 geneticist, who quite obviously took Intelligent Design<br/>     12 seriously and didn't think of it as being exclusive of<br/>     13 evolution. Right. So -- so -- so the thing is that what<br/>     14 would be -- yeah. I mean, there is a sense in which the<br/>     15 Intelligent Design movement as it's understood today, you<br/>     16 know, as this is kind of American phenomena defined by these<br/>     17 guys who made the assumptions in association with the<br/>     18 Discovery Institute, I mean, there's a sociological way of<br/>     19 defining them. Yeah, maybe that form wouldn't exist. But<br/>     20 the general ideas and stuff, I mean, are still lurking there<br/>     21 in evolutionary theory. And there is stuff that these people<br/>     22 have already developed that could be taken, you see. I mean,<br/>     23 so -- I'm sorry. I don't know if that answers your question.<br/>     24 But I was trying to sort of --</p> <p>25 BY MR. ROTHSCHILD, CONTINUING:</p> |

24 (Pages 90 to 9..)

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| <p style="text-align: right;">94</p> <p>1 Q I want to go through some of the assertions in your report.<br/>     2 If you could turn to page one, you have a section titled at<br/>     3 the bottom of the page is evolution fact or theory?<br/>     4 A Uh-huh.<br/>     5 Q <u>And if I understand the text that follows correctly, your</u><br/>     6 <u>view is that evolution is both a fact and a theory; is that</u><br/>     7 <u>fair?</u><br/>     8 A Yes.<br/>     9 Q Okay. And when you use the word theory for a scientific<br/>     10 proposition, do you have a specific definition in mind?<br/>     11 A Yeah. I basically mean an explanatory conception of a range<br/>     12 of phenomenon. And also that could serve as the basis for a<br/>     13 research program, for an empirical research program.<br/>     14 MR. ROTHSCHILD: I'm going to mark as Fuller Exhibit 2<br/>     15 the Complaint filed in this matter.<br/>     16 (Marked for identification Fuller Deposition Exhibit<br/>     17 No. 2)<br/>     18 THE WITNESS: Oh, thanks.<br/>     19 BY MR. ROTHSCHILD, CONTINUING:<br/>     20 Q If you could turn to page seven of the Complaint and look at<br/>     21 paragraph 13.<br/>     22 A Yeah.<br/>     23 Q You see in the second line of that paragraph, we have a<br/>     24 definition from the National Academy of Science -- Sciences<br/>     25 for the word theory?</p> | <p style="text-align: right;">96</p> <p>1 because there is no research program generated.<br/>     2 Q What about creation science?<br/>     3 MR. GILLEN: Object to form.<br/>     4 BY MR. ROTHSCHILD, CONTINUING:<br/>     5 Q Does that qualify as --<br/>     6 A No. Not in the -- not in the terms that we were talking<br/>     7 about earlier.<br/>     8 Q Okay. Now, if we use the National Academy of Sciences<br/>     9 definition, does evolution qualify as a scientific theory?<br/>     10 A Yes.<br/>     11 Q Okay. Does Intelligent Design?<br/>     12 A Probably not.<br/>     13 Q Why not?<br/>     14 A Well, because it's not well-substantiated. And I think<br/>     15 that's probably why they define theory this way.<br/>     16 Q Okay.<br/>     17 A Because it sort of is prejudicial -- it's sort of -- it's<br/>     18 quite biased toward a theory that's been around for a long<br/>     19 time and has been allowed to in fact incorporate lots of<br/>     20 facts, laws, inferences and so forth, right? It's very<br/>     21 biased towards an established theory.<br/>     22 Q Would you agree that the definition in the National<br/>     23 Academy -- that the National Academy of Sciences uses is more<br/>     24 rigorous or difficult to satisfy than the definition you use?<br/>     25 A No. I think they're quite -- they're different kinds of</p>  |
| <p style="text-align: right;">95</p> <p>1 A Yes.<br/>     2 Q It says in science, a well substantiated explanation of some<br/>     3 aspect of the natural world that can incorporate facts, laws,<br/>     4 inferences and tested hypotheses; do you see that?<br/>     5 A Yes.<br/>     6 Q Is that a definition of scientific theory that you're<br/>     7 comfortable with?<br/>     8 A Well, I don't think it has to be well-substantiated, and I<br/>     9 think it has to provide the basis for a research program. I<br/>     10 mean, this is too static a definition.<br/>     11 Q So you don't accept this definition?<br/>     12 A I don't think it's sufficient.<br/>     13 Q Okay. You would add the content that it has to assert --<br/>     14 create the basis for a research program?<br/>     15 A That's correct.<br/>     16 Q And you would remove the word well-substantiated?<br/>     17 A That's right. I don't think that's necessary.<br/>     18 Q Okay. Using your definition of theory, scientific theory,<br/>     19 does the theory of evolution qualify?<br/>     20 A Yes.<br/>     21 Q Does the theory of Intelligent Design qualify?<br/>     22 A Yes.<br/>     23 Q Does creationism qualify?<br/>     24 A No, because -- well, not creationism in that six day sense we<br/>     25 were talking about earlier. Presumably that's what you mean</p>                               | <p style="text-align: right;">97</p> <p>1 definitions in a way. I don't -- I don't see it as more<br/>     2 rigorous necessarily. Let's put it this way. Their<br/>     3 definition wouldn't necessarily encourage you to continue<br/>     4 doing science.<br/>     5 Q Okay. Would you agree that your definition incorporates<br/>     6 scientific propositions that are early in their -- very early<br/>     7 in their development, whereas the National Academy of<br/>     8 Sciences' definition requires that the concept be much more<br/>     9 developed?<br/>     10 A Correct. So by this definition, the only thing that counts<br/>     11 as a theory is a developed theory, by the National Academy of<br/>     12 Sciences. That strikes me as very strange.<br/>     13 Q If you go to the top of page two -- and let me just --<br/>     14 actually, I'm going to read to you, and I'm sorry, I don't<br/>     15 have an extra copy -- or maybe, actually --<br/>     16 MR. GILLEN: Want me to make one?<br/>     17 MR. ROTHSCHILD: No, actually, I may have it. Mark this<br/>     18 as 3.<br/>     19 (Marked for identification Fuller Deposition Exhibit<br/>     20 No. 3)<br/>     21 BY MR. ROTHSCHILD, CONTINUING:<br/>     22 Q Fuller -- the document I've marked as Fuller Exhibit 3 is a<br/>     23 press release issued by the Dover Area School District. And<br/>     24 you see at the bottom that there is a statement that the<br/>     25 school district is going to read to students in biology</p> |

25 (Pages 94 to 97)

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| <p>98</p> <p>1 class; do you see that?</p> <p>2 A Yes.</p> <p>3 Q Okay. And at the bottom of the page the statement states, a</p> <p>4 theory is defined as a well tested explanation that unifies a</p> <p>5 broad range of observations. Do you see that?</p> <p>6 A Yes.</p> <p>7 Q Do you accept that as a proper definition of a scientific</p> <p>8 theory?</p> <p>9 A I think I would replace well tested with testable.</p> <p>10 Q Okay. Using your amended definition, is evolution a theory?</p> <p>11 A Yes.</p> <p>12 Q Is Intelligent Design?</p> <p>13 A Yes.</p> <p>14 Q Okay. Using the definition without your amendment, is</p> <p>15 evolution a theory?</p> <p>16 A Yes.</p> <p>17 Q Okay. Is Intelligent Design?</p> <p>18 A I don't know.</p> <p>19 Q And is the criteria that calls you to question that the issue</p> <p>20 of well tested?</p> <p>21 A Yes.</p> <p>22 Q Okay. Do you -- and you don't have -- you don't know whether</p> <p>23 Intelligent Design can be characterized as well tested?</p> <p>24 A Well, it certainly has been tested, you see. And I think --</p> <p>25 and it is testable. But again, it's this issue of the age of</p>  | <p>100</p> <p>1 the tests that are undergone in science have that quite</p> <p>2 specific character saying I've got a fact, it shows that this</p> <p>3 is right or this is wrong. It's only under very kind of</p> <p>4 controlled conditions you can normally do that sort of thing.</p> <p>5 Otherwise, these tests are of a much more indirect kind,</p> <p>6 where you're providing challenges that you think the theory</p> <p>7 needs to answer to.</p> <p>8 Q Okay. So a couple questions there. Are you aware of any way</p> <p>9 in which Intelligent Design has been empirically tested?</p> <p>10 MR. GILLEN: Objection to form.</p> <p>11 THE WITNESS: I'm not -- I'm not -- I'm not -- I'm not --</p> <p>12 case.</p> <p>13 BY MR. ROTHSCHILD, CONTINUING:</p> <p>14 Q Okay. You -- I think you're suggesting it has been</p> <p>15 conceptually tested by the -- has been conceptually tested by</p> <p>16 the challenges raised by critics?</p> <p>17 A Yes, yes.</p> <p>18 Q I'm a little troubled by this idea that a concept would</p> <p>19 attain some scientific pedigree as a tested proposition</p> <p>20 solely by the fact that opposing scientists have found</p> <p>21 problems with it. I mean, how does that -- how does that</p> <p>22 advance a scientific concept if all that happens is the</p> <p>23 proponents of the idea raise a concept and, you know, a bunch</p> <p>24 of other scientists demonstrate what's conceptually wrong</p> <p>25 with it?</p>  |
| <p>99</p> <p>1 the theory because well tested suggests, you know, it's been</p> <p>2 around a while, and it's been tested lots of times in lots of</p> <p>3 different ways. And I don't think that's true, you see. But</p> <p>4 that's not necessarily any fault of the theory itself, you</p> <p>5 see.</p> <p>6 Q How has Intelligent Design been tested at all?</p> <p>7 A Well, I think we were just talking about Dembski, for</p> <p>8 example, right. And we were talking about these</p> <p>9 counterexamples to his definition of the explanatory filter.</p> <p>10 Those counterexamples is a kind of testing at a conceptual</p> <p>11 level, right, because what he's doing is putting forward a</p> <p>12 mathematical formalization of a concept, and here a</p> <p>13 philosopher is coming up with counterexamples showing how it</p> <p>14 doesn't -- how it doesn't apply. So there's a test, right?</p> <p>15 Also, I guess in the case of Behe, trying to come up with</p> <p>16 alternative explanations. You know, so Behe says the only</p> <p>17 way you can explain the way the cell maintains its stability</p> <p>18 is through irreducible complexity, and some evolutionists</p> <p>19 say, no, we've got an alternative explanation. Right. So in</p> <p>20 a sense, the exclusiveness of the explanation being proposed</p> <p>21 has been challenged. These are tests, right? I mean,</p> <p>22 they're -- they're not necessarily tests in the sense of</p> <p>23 coming up with a fact that shows that something is</p> <p>24 definitively right and wrong, but then in science, you know,</p> <p>25 relatively little is actually -- you know, relatively few of</p> | <p>101</p> <p>1 A Well, first of all, the fact that they bother doing it at</p> <p>2 all, and the terms in which they do it is familiar from other</p> <p>3 things that they are considering in their science, right.</p> <p>4 So, I mean, this is where people like Dembski and Behe are</p> <p>5 really making advances over creation science, if you're</p> <p>6 making that kind of comparison. Namely that they're now</p> <p>7 being answered in the coin of science. Okay. And in a way,</p> <p>8 they're being answered in ways that sort of brings their</p> <p>9 concerns close together to the concerns that are already</p> <p>10 taking place, you know, in other fields of science. So it</p> <p>11 seems to me that this is an implicit acknowledgment of</p> <p>12 bringing them in the scientific ambit. And I don't think we</p> <p>13 should get too fussy about empirical testing, because as more</p> <p>14 and more science gets done on computers and other kinds of</p> <p>15 simulation devices, the idea of there being direct empirical</p> <p>16 tests of things, you know, is going to be increasingly</p> <p>17 limited. I think these kinds of things that we're seeing</p> <p>18 here is going to be much more indicative of the kind of</p> <p>19 science that's going to happen in the future, where you have</p> <p>20 alternative computer models that can generate the same sort</p> <p>21 of phenomena that you can say can only be generated one way.</p> <p>22 And the design guys like to play around with that. And it</p> <p>23 seems to me a lot of science is heading in that direction.</p> <p>24 Q I mean, see, here's my problem. You know, I can come up with</p> <p>25 the assertion that all of biological life is made of</p> |

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|    | 106   |    | 108   |
| 1  | since I haven't read the pieces, I'm only sort of guessing      | 1  | Q I mean, again, I'm going to come back to this point I think I |
| 2  | what I imagine the research strategy is. But I take it that     | 2  | was trying to make at the -- this afternoon. That you're        |
| 3  | he's basically trying to show that there's a sense in which     | 3  | equating the presence of criticism with testability is that     |
| 4  | there are certain kinds of phenomena that evolutionary          | 4  | a -- I mean, am I --  |
| 5  | accounts cannot explain, and so whenever an evolutionary        | 5  | A That's --   |
| 6  | account is purported, he wants to say, well, in fact they       | 6  | MR. GILLEN: Object to form.                                     |
| 7  | can't explain everything and that this other account with       | 7  | THE WITNESS: Well, that's -- that's basically correct.          |
| 8  | irreducible complexity, we'll be able to do that. And so        | 8  | Yes. Yes, that's right, because I think -- I want to move       |
| 9  | it's a sort of battle of dueling accounts for various natural   | 9  | away from sort of the stereotyping of testability as somehow    |
| 10 | phenomena to get presented. I take it that's kind of -- and     | 10 | coming up with some sort of empirically precise prediction,     |
| 11 | if that is in fact what he's doing, then that would be          | 11 | let's say during an experiment, because, I mean, that's --      |
| 12 | scientific. But I'm just -- again, I haven't read the           | 12 | that's a kind of classic paradigm case of how we talk about     |
| 13 | articles.   | 13 | scientific testability, but it's not necessarily                |
| 14 | Q So you don't know?  | 14 | representative of all the forms of testability that are used    |
| 15 | A I don't know. But I do think, you know, I mean, I think it's  | 15 | in science.   |
| 16 | reasonable to suppose that that's what he's doing, given that   | 16 | BY MR. ROTHSCHILD, CONTINUING:                                  |
| 17 | he's publishing in the area and so forth.                       | 17 | Q Right. And as far as I can tell, the only form of             |
| 18 | Q But you're speculating on what the --                         | 18 | testability that you have identified for these Intelligent      |
| 19 | A Yes, I'm speculating.   | 19 | Design propositions is the fact that they are susceptible to    |
| 20 | Q Okay. And now going to Dr. Dembski, I think what you're       | 20 | criticism?  |
| 21 | saying is he came up with this concept of the explanatory       | 21 | MR. GILLEN: Objection to form.                                  |
| 22 | explanatory filter, there's been some criticism of it, he has   | 22 | THE WITNESS: Well, I mean, you make it sound like               |
| 23 | adjusted his definition; is that fair?                          | 23 | that's mere. I'm not sure what the spirit is in which you're    |
| 24 | A Yeah, I think that's right. I mean, so he has been            | 24 | saying criticism. I mean, first of all, the criticism           |
| 25 | continuing along with the same trajectory, trying to take       | 25 | isn't -- the criticism comes in rather specific form, right?    |
|    | 107   |    | 109   |
| 1  | into account the criticism. I think that that's basically --    | 1  | Namely, coming up with counterexamples or coming up with        |
| 2  | and that's not surprising.                                      | 2  | counter models in the case of Behe, right, which in effect      |
| 3  | Q Okay. And can you explain what he originated with and how     | 3  | you know, bring forward various kinds of other considerations   |
| 4  | it's changed?   | 4  | that need to be taken into account. So it's -- you know, the    |
| 5  | A Well, I mean, in terms of what he originated with, I think he | 5  | word criticism shouldn't be reduced to something like           |
| 6  | originally sort of set up something like a, you might say a     | 6  | carpeting or something, you know, as if, you know, all's        |
| 7  | menu by which you make the inference that something is design   | 7  | they're doing is, you know, treating, you know, just sort of    |
| 8  | based, and who you've managed to say that it cannot be          | 8  | plugging holes. They're in fact engaging with it, right, in     |
| 9  | explained by either strict physical regularity or by chance     | 9  | ways that forced Behe and Dembski to sort of, you know,         |
| 10 | occurrence. And he listed some conditions one would follow,     | 10 | rethink -- and to varying degrees, what exactly, you know,      |
| 11 | and then people brought up counterexamples to this. And he      | 11 | how they should proceed after that. So it's not a trivial       |
| 12 | has adjusted the theory to be able to deal with those           | 12 | thing to do.  |
| 13 | counterexamples. I cannot say whether he's dealt with it        | 13 | BY MR. ROTHSCHILD, CONTINUING:                                  |
| 14 | sufficiently that he's going to fend off all counterexamples    | 14 | Q Well, and I don't mean to treat it as trivial. But I do --    |
| 15 | in the future. But he is continuing along the same lines,       | 15 | I'm trying to confirm that in terms of how Behe's and           |
| 16 | only a corrected version of it.                                 | 16 | Dembski's work has been rendered testable, the only real life   |
| 17 | Q And does this correction fit your definition of a research    | 17 | examples of that that you are aware of is that the phenomenon   |
| 18 | trajectory where more of Intelligent Design's claims are made   | 18 | that it's -- they have elicited criticism; is that fair?        |
| 19 | testable?   | 19 | A Yes. But, I mean, I'm not sure in the normal run of science   |
| 20 | A Well, yes, in the sense that I think it, you know, it does    | 20 | what else you'd be looking for given that most scientific       |
| 21 | open up this field to critics in the future to -- because       | 21 | claims aren't directly testable in that classic, you know,      |
| 22 | he's still sticking with the same method largely, right, so     | 22 | empirical prediction kind of way that we talk about in          |
| 23 | people are in a sense getting used to the way he operates.      | 23 | philosophy of science 101. Okay. So I'm not sure what the       |
| 24 | And so it should make it easier in the future to criticize      | 24 | alternative that's in the back of your mind would be to         |
| 25 | him, I would think so.  | 25 | what's happened to them, given the nature of the kinds of       |

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|  | 118   |            | 120 |
| <p>1 A Yes, yes. That's right.</p> <p>2 Q Okay. And you also -- you used the term in your report</p> <p>3 metaphysical naturalism?</p> <p>4 A Yes.</p> <p>5 Q What do you mean by that?</p> <p>6 A Well, what methodological naturalism is in practice.</p> <p>7 Q And explain what you mean by that.</p> <p>8 A Well, I think -- see, naturalism is not an innocent view.</p> <p>9 Right. I mean, one of the consequences of methodological</p> <p>10 naturalism is that you sort of presuppose the world has to be</p> <p>11 a certain way in order for science to take place. So you</p> <p>12 restrict yourself to certain kinds of, you know, phenomena</p> <p>13 and ways of looking at the phenomena and close yourself off</p> <p>14 to other possibilities. So you close yourself off to</p> <p>15 Intelligent Design. And in the past, this kind of naturalism</p> <p>16 closed people off to looking at things like action at a</p> <p>17 distance with regard to gravitation attraction in Newtonian</p> <p>18 mechanics. And in -- even arguably, people say that if you</p> <p>19 really took this kind of methodological naturalism seriously,</p> <p>20 you wouldn't be able to make much sense of quantum mechanics</p> <p>21 as it currently is being made sense of, because that in a</p> <p>22 sense spends at least certain kinds of common sensical</p> <p>23 notions of physical causation that are normally seen as</p> <p>24 rooted in methodological naturalism. So in that sense,</p> <p>25 there's a kind of metaphysics that's associated with it. It</p> | <p>1 words, I don't think it's so -- you know. I don't think, you</p> <p>2 know, you can't -- I don't really know if there's a moment in</p> <p>3 Intelligent Design work where you say, ah, you know, you're</p> <p>4 now entering the supernatural here. You now need a</p> <p>5 supernatural explanation. I mean, that's kind of more a term</p> <p>6 a critic would use of it.</p> <p>7 Q Well, let me -- when --</p> <p>8 A So is Intelligent Design supernatural? Right? I mean -- I</p> <p>9 mean, certainly when the arguments are being conducted about</p> <p>10 it, you know, let's say to Dembski's version, the word</p> <p>11 supernatural doesn't have to arise, but it's quite clear the</p> <p>12 kinds of inferences he's making do take us beyond what</p> <p>13 normally is accepted within naturalistic forms of science.</p> <p>14 Q When we talk about Intelligent Design, do you understand</p> <p>15 Intelligent Design to take a position on who the intelligent</p> <p>16 designer is?</p> <p>17 A Not necessarily, though, I mean, historically, of course, a</p> <p>18 certain kind of monotheistic conception of God has been</p> <p>19 behind it. But I don't think the way the theories have been</p> <p>20 developed recently you'd really require any kind of view on</p> <p>21 this matter, that one could be agnostic. Yeah.</p> <p>22 Q Okay. And do you have an understanding of whether</p> <p>23 Intelligent Design takes a position on what the capabilities</p> <p>24 or powers of the Intelligent Design is -- designer is?</p> <p>25 A Well, this is, again, I don't think there's any kind of --</p> |            |     |
| <p>1 closes you off to appreciating certain kinds of phenomena.</p> <p>2 So in a sense, calling it methodological is a bit coy.</p> <p>3 That's what I would say. I'm using the term because that's</p> <p>4 the term Pennock, I believe, introduces. I myself would see</p> <p>5 naturalism as a metaphysical position.</p> <p>6 Q So to you, methodological naturalism and metaphysical</p> <p>7 naturalism or philosophical naturalism aren't really</p> <p>8 distinct --</p> <p>9 A That's right.</p> <p>10 Q -- concepts?</p> <p>11 A That's correct.</p> <p>12 Q At -- certainly at the end of your report, and I think</p> <p>13 elsewhere, you say that ID rejects naturalism and is</p> <p>14 committed to supernaturalism, right?</p> <p>15 A Well, I think if you're going to take that kind of</p> <p>16 distinction seriously, because I mean, the point I made about</p> <p>17 the naturalism/supernatural distinction is that it's a</p> <p>18 distinction created by naturalists, right, who in effect --</p> <p>19 who in effect say, look, these people aren't just considering</p> <p>20 sort of the normal material world in which things operate,</p> <p>21 but they also think there's this other stuff out there,</p> <p>22 Intelligent Design or spirits or something like this. And --</p> <p>23 and so that's the supernatural realm. I think actually my</p> <p>24 view about what Intelligent Design people are doing is</p> <p>25 actually kind of blurring the boundary more. So in other</p>  | <p>119</p> <p>1 MR. GILLEN: Object to form.</p> <p>2 THE WITNESS: I don't think there's any kind of uniform</p> <p>3 view on this matter. And in that respect, it's very much</p> <p>4 led -- I mean, this respect -- you know. There's a sense in</p> <p>5 which, look, the intelligent designer in a sense has to be</p> <p>6 intelligent enough to produce, you know, a cell, let's say,</p> <p>7 that has some kind of organic -- you know, stability over</p> <p>8 many different environmental changes. So it has to be that</p> <p>9 powerful or that intelligent. But does it have -- but it</p> <p>10 doesn't have to be infinitely powerful or intelligent. So in</p> <p>11 that respect, it is not committed to the fully robust notions</p> <p>12 of the divine creator that have been associated with the</p> <p>13 Judeo-Christian tradition. Right. You could actually --</p> <p>14 it's quite compatible with a much more restricted sense of</p> <p>15 intelligent designer.</p> <p>16 BY MR. ROTHSCHILD, CONTINUING:</p> <p>17 Q Do you understand the intelligent designer, its proponents to</p> <p>18 have provided any description of what capabilities the</p> <p>19 intelligent designer has or would need to have to do the</p> <p>20 things that they say it has done?</p> <p>21 MR. GILLEN: Object to form.</p> <p>22 THE WITNESS: Well, it all depends how you -- I mean</p> <p>23 look. There's a sense in which -- one of the reasons why</p> <p>24 Intelligent Design has been able to be critically discussed</p> <p>25 by other scientists and philosophers has been because they</p>                            | <p>121</p> |     |

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| <p style="text-align: right;">146</p> <p>1 including to the incorporation of religiously inspired<br/>2 doctrines, for example, Intelligent Design theory, a/k/a<br/>3 creationism into mainstream science education. Do you see<br/>4 that?</p> <p>5 A Uh-huh, uh-huh.</p> <p>6 Q And that's consistent with what you told me today, which is<br/>7 that Intelligent Design theory is a form of creationism?</p> <p>8 MR. GILLEN: Object to form.</p> <p>9 THE WITNESS: But it's -- no. But it's not all of<br/>10 creationism, and it's in fact the part of creationism that<br/>11 gets taken into science. So, I mean, I mean, obviously, I'm<br/>12 just -- because in the time that this piece was written,<br/>13 right, so this was written in 1998, Intelligent Design theory<br/>14 wasn't that widely used as an expression. So I put the<br/>15 creationism in there so people kind of have a sense of what<br/>16 exactly Intelligent Design is without me having to give a<br/>17 whole song and dance about it, because I'm just using it as<br/>18 an example. But I didn't mean to say that everything about<br/>19 Intelligent Design corresponds to everything about<br/>20 creationism.</p> <p>21 BY MR. ROTHSCHILD, CONTINUING:</p> <p>22 Q But you -- what do you understand the acronym a/k/a to mean?</p> <p>23 A Yeah, also known as.</p> <p>24 Q Okay. So --</p> <p>25 A Right. But in 1998, okay, we're talking -- you know, when</p>  | <p style="text-align: right;">148</p> <p>1 is now. Had I written this thing today, I would not put it<br/>2 this way. I mean, these things are time sensitive. In that<br/>3 respect, Intelligent Design has made progress fairly rapidly<br/>4 because in the course of whatever this is, seven years since<br/>5 this piece has been published, right, the status of this<br/>6 thing has changed somewhat.</p> <p>7 BY MR. ROTHSCHILD, CONTINUING:</p> <p>8 Q And in what respect?</p> <p>9 A Well, in the sense that I think it's more easily<br/>10 disentangleable. So like even when you were talking about<br/>11 Intelligent Design theory, you were able to nail it down to a<br/>12 few people, right, who are in a way separable from the<br/>13 general creation movement. And I think that -- you know.<br/>14 And I think that that's because of all the, you know, not<br/>15 just the publication of the books, but also the way in which<br/>16 the discussion of Intelligent Design has kind of moved off in<br/>17 its own space. So in a sense, you can talk all about<br/>18 Intelligent Design now without bringing in all the other<br/>19 schools of creationism, or the six -- you know, the six day<br/>20 stuff or any of that.</p> <p>21 Q But that was not true in 1998?</p> <p>22 MR. GILLEN: Object to form.</p> <p>23 THE WITNESS: I think in 1998 these things were much<br/>24 more confused.</p> <p>25 BY MR. ROTHSCHILD, CONTINUING:</p>  |
| <p style="text-align: right;">147</p> <p>1 did Dembski's book come out? 1998? I mean -- right? I<br/>2 mean, we're talking pretty early before this thing becomes<br/>3 really crystallized as something that's separable from all<br/>4 these different branches of creationism.</p> <p>5 Q So you're saying in 1998, Intelligent Design was more similar<br/>6 to creationism than it is today?</p> <p>7 MR. GILLEN: Objection to form.</p> <p>8 THE WITNESS: I'm not actually -- I'm not actually<br/>9 making any commitment to that in this parenthesis. I'm just<br/>10 using it as a marker so that people can understand what<br/>11 Intelligent Design -- since Intelligent Design theory was an<br/>12 ascendant notion, what exactly -- how -- you know, in what<br/>13 conceptual space one should put that when thinking about what<br/>14 religiously inspired doctrines mean.</p> <p>15 BY MR. ROTHSCHILD, CONTINUING:</p> <p>16 Q Okay. And Intelligent Design -- you were characterizing<br/>17 Intelligent Design theory as a religiously inspired doctrine?</p> <p>18 A Well, it is, and to a certain extent is religiously inspired.<br/>19 But to be religiously inspired is not to be religion.</p> <p>20 Q Okay. And -- and you were equating it with creationism?</p> <p>21 MR. GILLEN: Objection to form.</p> <p>22 THE WITNESS: I wasn't equating it. I wasn't equating<br/>23 it. All right. I mean, I was just -- I was using it as a<br/>24 kind of -- as a placeholder for it in a period where this<br/>25 term Intelligent Design wasn't yet consolidated in the way it</p> | <p style="text-align: right;">149</p> <p>1 Q Okay. Confused by who?</p> <p>2 A Well, I just mean just generally speaking.</p> <p>3 Q You for one?</p> <p>4 A Look, I didn't say I was a creationist or Intelligent Design<br/>5 theorist. But I do think that -- I do -- I do find -- I have<br/>6 found out more about it in the interim, I think it's fair to<br/>7 say that I knew less about it back then. Largely because<br/>8 there was less of it to know, okay. And I know more about it<br/>9 now. But again, this is seven years ago.</p> <p>10 Q Okay. Now, when I asked you about this before, you said<br/>11 you'd been following this issue?</p> <p>12 A Not -- I mean, but I never said I was an expert on this. I<br/>13 said I was following it, you know, kind of shadowing it.<br/>14 That doesn't mean I'm an expert on it.</p> <p>15 Q I mean, you know, these -- Steve, words are pretty hard to<br/>16 escape. Religiously inspired doctrine a/k/a creationism.<br/>17 And I think -- what I'm trying to understand is, you know,<br/>18 what about Intelligent Design caused you to characterize<br/>19 it -- characterize it as --</p> <p>20 A Well, because --</p> <p>21 Q -- Creationism at the time?</p> <p>22 A Because all of the response -- look. All of the responses to<br/>23 Behe and Dembski and the line of argument that that led --<br/>24 led from to the present day happened after this. I mean,<br/>25 there is a sense in which, you know, if you want to -- if you</p> |

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| <p>1 creationism, that's true.</p> <p>2 BY MR. ROTHSCHILD, CONTINUING:</p> <p>3 Q Okay. And what aspects of -- what do you mean by creationism<br/>4 when you say Intelligent Design does have roots in<br/>5 creationism or is creationist?</p> <p>6 MR. GILLEN: Object to form.</p> <p>7 THE WITNESS: Well, I mean, the motivation. The<br/>8 motivation for putting forward Intelligent Design is from<br/>9 people who do think that there is a divine creator. I mean,<br/>10 I think historically, that's been the case. And I think it's<br/>11 probably true of these people. But again, what makes it<br/>12 science isn't that fact. I mean, again, all kinds of<br/>13 religious motivations inform science. I mean, so there's<br/>14 nothing, in a sense by calling it creationism what I'm doing<br/>15 is I'm giving something about the motivation of the people<br/>16 but not necessarily about the scientific status of what<br/>17 they're doing. Those are two separate issues. You've got<br/>18 context of discovery, context of justification.</p> <p>19 BY MR. ROTHSCHILD, CONTINUING:</p> <p>20 Q Okay. And so when you -- when you refer to this Intelligent<br/>21 Design work as creationist, do you -- do you mean it only in<br/>22 the sense that it's motivated by creationist interest?</p> <p>23 A Yes.</p> <p>24 Q Okay. And not anything about the content of Intelligent<br/>25 Design?</p> | <p>154</p> <p>1 BY MR. ROTHSCHILD, CONTINUING:</p> <p>2 Q [REDACTED] In the first full<br/>3 [REDACTED] understanding,<br/>4 [REDACTED] theological -- one<br/>5 [REDACTED] and the other [REDACTED]. You say,<br/>6 is it reasonable or even nonblasphemous to suppose that God<br/>7 is the ultimate artificer? Artificer? And you go on to talk<br/>8 about Meyer's willingness to subvert the significance of the<br/>9 boundary between biological and mechanical forms of<br/>10 intelligence being intellectually bracing. And then it goes<br/>11 on. Can you explain what you're getting at here?</p> <p>12 A Well, I mean, in a sense what I'm bringing up is a kind of<br/>13 concern that actually you were bringing up earlier. I see<br/>14 you get your ideas from good places. Namely, this business<br/>15 of just because we can -- even if we can understand how human<br/>16 beings create things, why should we think this is any kind of<br/>17 model for understanding how God does things? And let alone<br/>18 how life is created. So, yes, that's the -- that is the<br/>19 objection I'm raising here.</p> <p>20 Q And I think -- I think you understand -- I understand that at<br/>21 one level you're raising that, that that's a theological<br/>22 problem?</p> <p>23 A Yes.</p> <p>24 Q That we -- it's blasphemous to suggest that, you know, what<br/>25 we know about ourselves and what we can do is in any way a</p> |
| <p>155</p> <p>1 A No, because in fact these people in practice don't actually<br/>2 say much about the qualities of the creator, right. I mean,<br/>3 in that sense, they don't do a lot of the stuff of<br/>4 traditional creationism.</p> <p>5 Q They do suggest that the designer is a supernatural creator,<br/>6 correct?</p> <p>7 MR. GILLEN: Object to form.</p> <p>8 THE WITNESS: Well, I mean, yes. But that's not saying<br/>9 a lot, you see. I mean, I just don't think that's saying<br/>10 very much. I think --</p> <p>11 BY MR. ROTHSCHILD, CONTINUING:</p> <p>12 Q Do you -- go ahead.</p> <p>13 A No, no, no, you go ahead.</p> <p>14 Q Do you consider that an aspect of creationism; that a -- that<br/>15 there is a -- that the explanations of life include a<br/>16 supernatural creator?</p> <p>17 MR. GILLEN: Object to form.</p> <p>18 THE WITNESS: Yes. I think creationism does presuppose<br/>19 that the creator is separate from the creation, in which case<br/>20 it is supernatural. Yes. I mean, so yes. I mean, it's<br/>21 attached to a certain kind of cosmology which does involve a<br/>22 difference between the creator and the created. So it's<br/>23 true, supernatural in that sense. But again, I don't see<br/>24 this as operating in a way that actually, in some way<br/>25 visciates the science that's being done.</p>   | <p>157</p> <p>1 model for God; is that right?</p> <p>2 A Yes, yes.</p> <p>3 Q Okay. Is that -- do you also -- are you also suggesting that<br/>4 that argument is scientifically problematic?</p> <p>5 A Well, I don't seem to say that here, do I? No, no. The<br/>6 scientific side is a different argument, isn't it, right?<br/>7 Because there's two arguments here, right? There's a<br/>8 theological argument which is what we're talking about, but<br/>9 then there is also a scientific issue.</p> <p>10 Q Right, which is separate?</p> <p>11 A Yeah.</p> <p>12 Q Do you find the first argument which you focus on<br/>13 theologically --</p> <p>14 A Yeah.</p> <p>15 Q -- also to be scientifically problematic? Because I can't<br/>16 get over it.</p> <p>17 A I -- see, my attitude toward this has changed a bit over the<br/>18 last seven years, okay? I mean, I guess I would have said<br/>19 yes back then, that it was problematic. But now I think that<br/>20 there's a sense in which, as so much -- I've mentioned this<br/>21 earlier. So much of science goes on to be done as computer<br/>22 simulations, where the scientists in a sense has to be<br/>23 something an artificer, and that includes when one is trying<br/>24 to model the nature of life and the way in which life<br/>25 develops and so forth, I think it actually becomes easier to</p>   |

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|   | 170 |   | 172 |
| 1 Q No, no, I understand. But what I'm saying, you -- you 1<br>2 made a point which I think I agree with, which is, you know, 2<br>3 Behe's, you know, effectively elim -- saying he's eliminated 3<br>4 one possibility, but there might be other hypotheses, right? 4   |     | by denying what -- I mean, if you got -- if you got random 5<br>mutation and natural selection as one hypotheses, right, then 6<br>the other -- you know, the other hypothesis could be one 7<br>where there is some kind of plan. And since the cell had -- 8<br>you know, the cell is designed the way it is so that it could 9<br>survive many different kinds of changes in the natural 10<br>selection environment. That's not -- that's not an 11<br>incomprehensible notion, right? I mean, it's just to make 12<br>that specific so you could actually test whether it's, you 13<br>know, it's -- it's true in a certain situation, I think 14<br>that's the problem. It's not really specified enough. But, 15<br>you know, I mean -- let me make a follow up point to this. 16<br>Evolutionists and Intelligent Design people can go about 17<br>criticizing each other and that's perfectly fine and that's 18<br>very appropriate in science. But there is also -- you know, 19<br>but as it were, the -- the relative scientific status 20<br>of the theories aren't just determined by those clashes and 21<br>what happens in those clashes. But it's also determined by, 22<br>as it were, how they take it home to develop their own 23<br>theories independently. So if we take seriously the idea 24<br>that Intelligent Design theory is in a way trying to scope 25<br>out the phenomena of reality somewhat differently than the evolutionists are, so it includes cosmological issues and maybe supernatural issues, even, in a way in which evolution rules out of court, right, then what you're also looking at |     |
| 10 Q Okay. But then I -- even granted your point, which I do, I'm 10<br>11 still troubled by the idea that even if you could eliminate 12<br>12 all the, for example, natural hypotheses that have been 13<br>13 asserted, one could make a positive case for action by an 14<br>14 intelligent designer. And I'm trying to understand how that 15<br>15 follows, which I -- I -- I think is the conclusory 16<br>16 proposition?   |     |   |     |
| 17 A Yes. I mean, yes. It doesn't follow. You're absolutely 17<br>18 right. But typically what happens in these kinds of 18<br>19 arguments, right, is that the Intelligent Design person, as 19<br>20 the person who's always facing evolutionary challenge, has 20<br>21 make the Intelligent Design argument more specified, right? 21<br>22 So what happens then is that the Intelligent Design argument 22<br>23 becomes more precise. So I think what -- I don't see it as 23<br>24 an inherent problem. It just means that there's -- there's 24<br>25 never going to be a decisive moment where the Intelligent |     |   |     |
|   | 171 |   | 173 |
| 1 1 Design argument wins by default by seeing off evolutionary 1<br>2 challenges. That's all it means.  |     | is not how -- not only how these two theories relate to each 1<br>other, but also how they develop in light of the criticism in 2<br>their own terms. Do they go to the places they're trying to 3<br>go to with regard to explanation and so forth? And so when 4<br>somebody like Meyer, let's say, wants to have this kind of 5<br>covering information theory as the metatheory of Intelligent 6<br>Design, well, that's nothing -- you know, that's -- you know, 7<br>evolutionists think that's just weird, right? But then he's 8<br>trying to do something different. He's not trying to do what 9<br>the evolutionists are doing. So while they do conflict over 10<br>certain areas like how do you explain the cell's stability, 11<br>the overall goals of the research program are somewhat 12<br>different, and so there are different kinds of concerns that 13<br>they will then want to take forward when they develop their 14<br>theories.   |     |
| 3 Q But I --  |     |   |     |
| 4 A It doesn't mean it ever -- at no point does it ever get shown 4<br>5 to be wrong. It -- what -- it shows it hasn't eliminated 6<br>alternatives.  |     | 16 Q Go to the next page of the article, page 540. You invoke the 17<br>well-known and highly regarded Fuller's Fairness Rule, which 18<br>is if you appeal to metaphysical explanations at all, you 19<br>must permit a plurality of them. And you also -- you go on 20<br>to say virtually any metaphysical hypothesis can be 21<br>maintained in the face of any negative evidence. Explain 22<br>what's going on here.  |     |
| 7 Q And never would?  |     |   |     |
| 8 A That's entirely --  |     | 23 A Okay. Well, this is, in a sense, kind of the -- it's in -- 24<br>it's in a way trying to find a useful place for metaphysics 25<br>and science. Okay. And the idea here being that when  |     |
| 9 MR. GILLEN: Object to form.   |     |   |     |
| 10 THE WITNESS: I mean, that's entirely possible. And 11<br>11 that's why some people object to the idea of inference to the 12<br>best explanation as being a method in science, wherein a 13<br>sense, right, the question is always open as long as there 14<br>are alternative hypotheses available. People who believe in 15<br>the inference to the best explanation do believe that all the 16<br>opponents are eventually seen off.   |     |   |     |
| 17 BY MR. ROTHSCHILD, CONTINUING:   |     |   |     |
| 18 Q All right. And -- and -- and -- what -- and I -- but I -- 19<br>20 and I'm still trying to get to the point, we're talking about 21<br>inference to the best explanation. But I don't see how 22<br>Intelligent Design is unexplanation at -- what the -- what 23<br>the affirmative case is for Intelligent Design even being one 24<br>of the alternatives?  |     |   |     |
| 24 A Well, I'm not sure. I mean, it seems to me that the 25<br>possibility of space for Intelligent Design is opened up just  |     |   |     |

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| <p style="text-align: right;">186</p> <p>1     their hand rhetorically. What do you mean by that?</p> <p>2     A   This is -- yeah. I know -- I recall saying this. I just</p> <p>3       can't quite find where you're looking at.</p> <p>4     Q   It's the second full paragraph.</p> <p>5     A   Second full paragraph, okay.</p> <p>6     Q   Towards the bottom of the page.</p> <p>7     A   Right. I mean, the point here being that -- that if ID is</p> <p>8       able to provide a scientific explanation for something, that</p> <p>9       doesn't rule out the evolutionary one. But there's a</p> <p>10      tendency to sort of see these things, I think on both sides,</p> <p>11      in mutually exclusive terms. So if we can provide an</p> <p>12      explanation and you guys -- and you guys can't then, you</p> <p>13      know, in principle, we're the only ones who can. So, I mean,</p> <p>14      I do think that there's a tendency on both sides to think</p> <p>15      that the two are sort of mutually exclusive.</p> <p>16     Q   And you say then epistemological legitimacy of ID doesn't</p> <p>17      require showing that evolution cannot provide a credible --</p> <p>18     A   Right, right.</p> <p>19     Q   -- alternative framework, just requires showing that ID has</p> <p>20      an explanatory framework that can be the basis for a body of</p> <p>21      scientific research?</p> <p>22     A   That's right. I was making that point earlier with regard to</p> <p>23      the fact that you just can't judge the legitimacy of ID just</p> <p>24      purely in terms of how it faces up against evolution. You</p> <p>25      have to see how it is able to develop the stuff in terms of</p>  | <p style="text-align: right;">188</p> <p>1     A   No, no, it has -- no, it isn't that. I mean, it's to say</p> <p>2       that the cell has to have certain kind of components in place</p> <p>3       in order to have the stability it has so that it's able to</p> <p>4       survive all the various changes in the environment. Now, it</p> <p>5       seems to me that that project, if it were fully executed,</p> <p>6       could be done independently of anything going on in</p> <p>7       evolutionary theory. I mean -- I mean, so in that respect,</p> <p>8       Intelligent Design could be pursued as an independent</p> <p>9       program.</p> <p>10     Q   So if -- if Behe simply showed empirical evidence of the cell</p> <p>11      maintaining stability --</p> <p>12     A   Well, this is what I would say. I mean, I wouldn't do it</p> <p>13      that way. I would actually go to the computer simulation and</p> <p>14      try to model the cell, right, and actually try to come up</p> <p>15      with the parameters whose interactions end up producing a</p> <p>16      cell, right, a virtual cell, simulation of a cell, right,</p> <p>17      that is able then to maintain its stability in the face of</p> <p>18      the kinds of environmental changes that we normally think of</p> <p>19      cells as being able to survive in. Right. So if you were</p> <p>20      able to do that, and so he could then say, look, I've been</p> <p>21      able to program a cell, and you can do it this way, and</p> <p>22      there's not going to be an alternative evolutionary</p> <p>23      explanation for that. And as it were, then throw the</p> <p>24      gauntlet down and say, you come up with something that isn't</p> <p>25      as designed as this, that in some sense has a kind of random</p>   |
| <p style="text-align: right;">187</p> <p>1     its own framework.</p> <p>2     Q   And what is your understanding of the explanatory framework</p> <p>3       ID offers other than the assertion that evolution doesn't</p> <p>4       provide a credible framework?</p> <p>5     A   Well, I mean, this is where the explanatory filter and the</p> <p>6       irreducibly complexity notions get mobilized as a way of</p> <p>7       suggesting research avenues. I mean, that's -- that's the</p> <p>8       basic -- that's what I mean by the explanatory framework,</p> <p>9       that within which then research can be done.</p> <p>10     Q   But isn't irreducible complexity nothing more than the</p> <p>11       assertion that the evolutionary framework doesn't work?</p> <p>12     A   No, it isn't more than that, I mean, because the issue then</p> <p>13       depends -- determines -- it turns on how you actually develop</p> <p>14       this thesis, right. And presumably, what you want to do with</p> <p>15       the irreducible complexity is to identify as it were the</p> <p>16       parameters that -- all of which have to be in place in order</p> <p>17       to sell -- in order for the sell to have its stability the</p> <p>18       way it does, and that there's no way of removing any of those</p> <p>19       parameters without in fact undermining the stability of the</p> <p>20       cell, and that evolution cannot provide an alternative to</p> <p>21       that. So it seems that there is a self-contained research</p> <p>22       program that perhaps has not been fully executed but is</p> <p>23       suggested by the idea.</p> <p>24     Q   And I'm not sure what that is besides the fact that evolution</p> <p>25       or natural selection isn't an adequate explanation?</p> | <p style="text-align: right;">189</p> <p>1     element or something, and you still get this kind of</p> <p>2       stability over time. I don't think he's done that yet, but</p> <p>3       it seems to me it could be done. I mean, it'd probably be</p> <p>4       very difficult, but not out of the question. I mean, I'll</p> <p>5       tell you one advan -- one -- one thing about Intelligent</p> <p>6       Design that I think is worth pointing out is because you</p> <p>7       don't actually have departments and schools and disciplines</p> <p>8       of Intelligent Design, there's not a ready-made way of</p> <p>9       training people in the kinds of skills that'll be necessary</p> <p>10       to sort of carry out a lot of the details of this project. I</p> <p>11       mean, that's a real problem, I think, that they face</p> <p>12       sociologically at the moment because, you know, if you've</p> <p>13       only got a few guys kind of putting forward bold hypotheses</p> <p>14       and trying to do very sort of striking bits of forays, you</p> <p>15       know, challenging evolutionists, you can only go so far. You</p> <p>16       really need to train generations of people. In fact, that --</p> <p>17       you know, that's how any science survives. And it was only</p> <p>18       starting in the 1930's and '40's that you start to be able to</p> <p>19       train biologists who have a sufficient range of skills to</p> <p>20       actually be able to contribute to Neo-Darwinism as this</p> <p>21       fully-fledged program that we see it today. So, you know, in</p> <p>22       a way, they do have a sort of sociological disadvantage here.</p> <p>23       They're basically trying to cover a lot of the waterfront all</p> <p>24       by themselves, and of course they don't have all the skills</p> <p>25       to do it. This is why they would need a school of people to</p> |

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| <p style="text-align: right;">214</p> <p>1 Q Uh-huh. You refer, I think at footnote 11 to a book by --</p> <p>2 A Oh, yeah.</p> <p>3 Q -- Thomas Woodward, Doubts About Darwin.</p> <p>4 A Yes.</p> <p>5 Q What is that book about?</p> <p>6 A Okay. This was a guy's Ph.D. thesis originally. And what it is, he basically followed various people around who've been debating the Intelligent Design/Darwin issue publicly. You know, so when Phillip Johnson and Stephen J. Gould were debating, I mean, he'd follow all these people across the country. And he's basically charting sort of the development and the arguments that are taking place. And one of the points that he makes is that in fact Intelligent Design people kind of have evolved, you might say, as they've interacted with scientists and they've made more sophisticated arguments and so forth. And so there's been a kind of learning curve, you might say, that now makes Intelligent Design a much more sophisticated theory through the interaction with the scientists. I mean, it's the kind of thing, you know, the sort of thing that John Angus Campbell kind of says would happen, he sort of documents. And as a participant observer, which means that he's kind of there in the meetings, asks some questions, you know, and then writes about it.</p> <p>25 Q Do you have any relationship with Mr. Woodward?</p>           | <p style="text-align: right;">216</p> <p>1 A No, I have not.</p> <p>2 Q Why not?</p> <p>3 A Well, I don't -- I guess I just -- I haven't thought I was in a particularly persuasive position to convince the natural scientists about teaching anything other than what they already do. I mean, so it just didn't seem to fall to me to do that. I guess that would be the main reason. Also I do think there is this issue we keep on going back to about what's the appropriate faculty for discussing these matters. And that in the case of some of these things, that a mathematics or statistics department might be better than a chemistry or biology department for a lot of this stuff. So I think there's a kind of open question about where exactly would you want to be placing the study of this thing.</p> <p>15 Q Same question applies to the high school level?</p> <p>16 A Well, the high school level, the science courses are much more generic, aren't they? I mean, so -- and also I think there's a different purpose as well, because at the high school level, there is a sense in which you're trying to seed the next generation of scientists potentially. I mean, that was something that even your guy, Alters, brought out. And that it becomes important then to think about the different scientific perspectives in light of that, whereas by the time you get to university, people are training to be professionals already in a given science. So they're sort of</p> |
| <p style="text-align: right;">215</p> <p>1 A Do I have any relationship with him? I did teach this book in -- at UCLA when it was still in its proof form. I mean, I know -- you know, and I have been in contact with him actually because he does derive some kind of methodological inspiration from some of my writings in the appendix of the book. But I've never taught the man, I've never met him personally. By the way, the context I would say where -- where he is drawing some inspiration from me relates to the questions that you were raising earlier about the tributary delta stuff, about the idea of broadening out the scientific base so that larger numbers of people can have access to stuff. That's the kind of thing that he found initially attractive, which comes up in this book mine on Thomas Kuhn.</p> <p>14 Q I think you said very early in our discussion that Intelligent Design is not taught as part of the biology courses at Warwick University?</p> <p>17 A That's correct.</p> <p>18 Q Okay. And --</p> <p>19 A But we do teach, you know, in this philosophy master's degree thing, we do teach it. And so --</p> <p>21 Q Okay. But I'm correct that it's not part of any of the natural sciences curriculum?</p> <p>23 A No, no.</p> <p>24 Q Have you ever advocated at the university that Intelligent Design be taught as part of the natural sciences curriculum?</p> | <p style="text-align: right;">217</p> <p>1 already engaged in a kind of more technical sort of thing.</p> <p>2 And that's -- it's harder to institutionalize at that level.</p> <p>3 I think it actually would be easier to institutionalize at the high school level.</p> <p>5 Q Wouldn't it make sense at the undergraduate level, to seed the next generation of scientists, when the students are --</p> <p>7 A Well, okay.</p> <p>8 Q -- sophisticated?</p> <p>9 A My -- I should explain something. In Britain, you come in already specialized. I mean, you see, in America, it's quite common for the first year or two of the undergraduate level to in a sense be searching around for a major. And so, yes, in that context, I think that's a -- that's actually right.</p> <p>14 So I take your point there. But I was thinking about the British context, right, where you sort of start specializing -- you get admitted into a university in a subject. And that's why the degree program is a three year rather than a four year program.</p> <p>19 Q Could you turn to page 11 of your report.</p> <p>20 A Yeah.</p> <p>21 Q And at the bottom paragraph, you talk -- you talk about most philosophers having resisted the charms of naturalism.</p> <p>23 A Yes.</p> <p>24 Q And that's -- I take it you're distinguishing them from scientists who, to a large extent, have succumbed to the</p>   |

55 (Pages 214 to 217)

1 Q Have you taught any classes in education?  
 2 A Yes.  
 3 Q What have you taught?  
 4 A Well, I've taught a cross-listed class at UCLA between  
   5 library and information science and education.  
 6 Q And what was the subject matter of that class?  
 7 A It was on my own -- my own work on social epistemology which  
   8 has some credibility in these areas.  
 9 Q Do you consider yourself an expert in Intelligent Design?  
 10 A An expert in Intelligent Design. No.  
 11 Q Okay.  
 12 A I'm an expert on the nature of science.  
 13 Q Gotcha. Okay. Do you consider -- do you consider  
   14 yourself -- you said that Intelligent Design is science. I  
   15 think -- I think we can agree, you're basically saying it's  
   16 science but not as far along as some of the other natural  
   17 sciences?  
 18 A Yes.  
 19 Q Okay. Do you consider yourself an expert on the scientific  
   20 content of Intelligent Design?  
 21 A I'm not sure what you mean by that.  
 22 Q Well, let me ask you, let me ask you, what is Intelligent  
   23 Design?  
 24 A What is Intelligent Design? Well, it's an attempt to explain  
   25 actually a vast array of phenomena, not just restricted to

1 understanding the nature of life, that's sort of an extension  
 2 of the idea, because I think we have no problem with  
 3 Intelligent Design with regard to artifacts.  
 4 Q And why do you say that?  
 5 A Because humans are the intelligents who are designing the  
   6 things. I mean, we know where it comes from. We actually  
   7 know the causal process in terms of how these things are  
   8 produced.  
 9 Q And how do you understand we come to that knowledge with  
 10 artifacts?  
 11 A How do we come to that knowledge? Well, largely because we  
   12 could do it ourselves. Right. We can actually produce  
   13 these -- we can say -- I can say, look, I'm going to design a  
   14 car. I'm doing it, it's done. Here's the car. And you can  
   15 sort of lay out the steps by which it happens. You can talk  
   16 about the general blueprint, how the blueprint's supplied  
   17 materially to make the thing run and then it works. And so  
   18 you have a complete sense of that causal process there. And  
   19 so that's the kind of paradigm case I would say of  
   20 Intelligent Design.  
 21 Q And am I correct in understanding your testimony from a  
   22 couple minutes ago that that kind of design inference, so to  
   23 speak, is the model for the design inference being used for  
   24 biological life?  
 25 A Yeah, I would say so. I would say that's ultimately what's

1 the origins of life, in terms of some kind of design that was  
 2 put there deliberately. Now, the scope of the theory -- the  
 3 scope of this science is potentially quite large. In that  
 4 respect, it's very much like information science, that in a  
 5 way, doesn't have to be restricted to a single domain. So  
 6 it's just not about life. It could be about anything that  
 7 displays this design pattern because machines, obviously,  
 8 have Intelligent Design, right, and they're not forms of  
 9 life. So it is -- in a way, it's kind of almost like a  
 10 second order science, like information theory attempts to be.  
 11 I guess that would be how I would pitch it.  
 12 Q You used -- you know, obviously, the word design is in the  
   13 term Intelligent Design.  
 14 A Yeah, yeah.  
 15 Q What do you mean by design?  
 16 A Well, it's very unlikely that the order that is produced  
   17 would have come about through -- through chance, right, that  
   18 there isn't some sense, some plan there that the order was  
   19 meant to be there. I mean, the model for it in an artifact  
   20 or a machine. Something, obviously, a human has designed.  
   21 mean, that's -- I mean, in that respect, you know, Paley sets  
   22 a kind of benchmark for what the image of the -- of what the  
   23 science is about. And that's why -- that's the -- sort of  
   24 the natural way to understand this. And then with all the  
   25 stuff that's going on now with Intelligent Design

1 being aimed at. Yes.  
 2 Q Here's what I don't understand. And maybe you can help clear  
   3 this up for me. You explained how we understand design of  
   4 human artifacts from the -- and you said, you know, we can  
   5 understand it because we can do it, right? How does that  
   6 provide a model for design of biological life?  
 7 A Well, I think the best way to think about this is in fact  
   8 with what -- imagine computer simulations which, you know,  
   9 are increasingly in the biological sciences when we're trying  
   10 to project backward into how life began, where, you know, we  
   11 have recourse -- we of course have recourse to fossils to a  
   12 certain extent. We can get some sense of what life was like  
   13 in the beginning that way. And we can do some DNA testing on  
   14 that. But increasingly we have to rely on computer  
   15 simulations. And computer simulations are design functions,  
   16 right, where you're programming a system to behave in a  
   17 certain way, and then you see what the outcomes are. And you  
   18 say, well, okay, let's say that I imagine that the world was  
   19 designed with these three or four parameters that interact in  
   20 a certain way according to a computer program I can  
   21 specialize -- specify. Well, that then produced the world as  
   22 we know it. Okay. If it does, right, that's a good argument  
   23 for design, it seems to me. If not, you know, back to the  
   24 drawing board. But the point is we're already doing stuff in  
   25 science where we're actually engaged in design like

1 activities.

2 Okay. So I don't think it's so far-fetched in  
 3 principle, especially in the period in which we're living,  
 4 where we're doing more and more of our science on computer  
 5 programs which requires that the scientist actually design  
 6 the situation in which the phenomenon is going to manifest  
 7 itself. I mean, so I -- I don't see -- I don't see quite the  
 8 problem in principle here.

9 Q Well, why would the fact that humans can design a model lead  
 10 us to any conclusions about what a non-human, non-natural  
 11 actor can do in terms of creating some form of biological  
 12 life?

13 A Well, just stated that way, sure. You're absolutely right.  
 14 But that's not -- that's not the whole story, right? In  
 15 fact, you know, this is where one -- I mean, the point is  
 16 that even people who don't consider themselves proponents of  
 17 Intelligent Design are in fact, you know, playing around with  
 18 models that, in a sense, put them in the position of  
 19 potential designers of universes. Okay. So in a sense,  
 20 science is moving in a design oriented direction already.  
 21 It's just the people doing it who, let's say, do complexity  
 22 theory and stuff like that don't like to call it Intelligent  
 23 Design. But in a sense, they're adopting the standpoint, you  
 24 know, that would seem to me ultimately Intelligent Design is  
 25 trying to work itself back to. That's why so many of these

1 A Yeah. I mean Dembski and Behe. That is to say, not the high  
 2 school textbooks.

3 Q Okay. So let's just be clear what you mean. And let me ask  
 4 this in a couple of -- a couple questions about this. First  
 5 of all, you said you're not -- you don't hold yourself out as  
 6 an expert in the content, the scientific content of  
 7 Intelligent Design, is that right?

8 A We haven't gotten back to what you mean by that yet. Can  
 9 you -- you just threw the question back at me. So what do  
 10 you mean by scientific content?

11 Q Well, okay, fair enough. What do you understand to be the  
 12 core propositions of Intelligent Design as it applies to  
 13 living things, biological life?

14 A What do I understand them to be?

15 Q Yes.

16 A Well, it depends which -- these guys don't all hold the same  
 17 views exactly. Okay. That's the first point, right?  
 18 Intelligent Design is, in a sense, kind of a covering term  
 19 for a lot of overlapping theories, you might say. I mean,  
 20 there is this business of -- I mean, that Behe emphasizes of  
 21 the irreducible complexity of cellular life. But then  
 22 there's also the business with Dembski and the idea of design  
 23 as a kind of explanatory filter that is not as probable as  
 24 just mindless natural regularity, but not as improbable as  
 25 chance. So these are kind of general notions that these guys

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1 arguments are arguments that, in a sense, are meant to be  
 2 conducted on computers under mathematical terms. It's not  
 3 it's not -- the old -- it is true that with Paley and a lot  
 4 of these old guys, there is some kind of analogy which is  
 5 parasitic on the idea that, you know, human beings are made  
 6 in the image and likeness of God. So if humans can do it,  
 7 then God can do it kind of in a bigger way. I understand  
 8 that, and that's the theological basis for the design  
 9 argument. But it seems to me now with science, we've got  
 10 sort of -- we're now in a situation where the way we actually  
 11 do science is one where we're in the design position, and  
 12 we're kind of doing the sorts of things that let's say a  
 13 creator would do if they were simulating a universe. And so  
 14 I don't see the -- you know, so it's sort of a different  
 15 basis for making the inference. Now, whether you're going  
 16 to -- you know, I mean, I would suppose the tough question  
 17 whether there would ever be any kind of empirical way of  
 18 resolving whether a simulated universe designed by a human  
 19 being, to say this is how the world happened, could ever be  
 20 proven empirically. And I don't know if that could happen.  
 21 But then again, evolution's stuck with that problem, too.  
 22 Everybody's kind of stuck with that problem.

23 Q One of the things you say on the first page of your report  
 24 my expertise experts to a consideration of ID in its most  
 25 developed forms.

1 are working with as providing constraints on the possibility  
 2 for life. Okay. And they're coming at it from somewhat  
 3 different directions. So, I mean, that's what -- at least  
 4 that's what I understand to be distinctive about the  
 5 position, right, in the sense it makes it different from what  
 6 evolutionists are saying.

7 Q Okay. So if -- the answer to the question, you know, what is  
 8 ID comprised of from a scientific standpoint is Behe's notion  
 9 of irreducible complexity?

10 A Yeah. And Dembski's explanatory filter. And those are the  
 11 basic explanatory principles, the fundamental ones that are  
 12 being developed now, it seems to me.

13 Q Other than those two explanatory principles, are you aware of  
 14 any other explanatory principles that are part of the  
 15 Intelligent Design as a scientific concept?

16 A Well, I would say at this level of generality, those are the  
 17 main ones. I mean, there's -- Meyer has this sort of an  
 18 information specification criterion as well. But, you know,  
 19 if you were to look at any given science, you'd only come up  
 20 with about two or three fundamental principles for any of  
 21 them any way. So the fact that there aren't a whole lot of  
 22 them, and they all seem to overlap or have something in  
 23 common, that itself is not prejudicial, it seems to me.

24 Q I'm not characterizing. I just want to make sure I  
 25 understand what you understand Intelligent Design to be.

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15 (Pages 54 to 57)

1 A Well, creation science was originally an attempt to sort  
 2 of -- I mean, I think in light of the Arkansas case, right,  
 3 it was seen as a way of trying to bring in these biblical  
 4 principles into the science classroom by making it look as  
 5 though there were scientific grounds for holding what turned  
 6 out to be biblical beliefs. And so sometimes fossils would  
 7 be appealed to, sometimes they would be dismissed out of  
 8 hand, depending on what kind of suited the purpose of the  
 9 textbook writer. But there was no real clear evidence of any  
 10 kind of internal development taking place. It was rather, it  
 11 seemed like kind of camouflage strategy. I mean, at least  
 12 that seems to be the final verdict on this.

13 Q And do you -- to you, Intelligent Design is different than  
 14 creation science?

15 A Yes, I think so. I think -- not only do I think it's  
 16 different, I think also its critics treat it differently.  
 17 That is to say, including the critics who don't want to see  
 18 it taught.

19 Q And in what respects is Intelligent Design different than  
 20 creation science?

21 A Well, because you, first of all, Intelligent Design actually  
 22 more self-consciously draws on these wider traditions of  
 23 Western thought from natural theology and onward that have  
 24 been marginalized by Darwin which try to deal with larger  
 25 questions about the nature of life, and which did have some

1 see, so all of that I think is indicating that Intelligent  
 2 Design is really scientific, and isn't very much reliant  
 3 anymore in whatever historical connections it's had with  
 4 religion.

5 Q If you took Dembski's work away, and you took Behe's work  
 6 away, and I understand you're not going to do that. But  
 7 would there then be any distinction between Intelligent  
 8 Design and creationism?

9 A Well, there's Meyer where I --

10 MR. GILLEN: Object to form.

11 BY MR. ROTHSCHILD, CONTINUING:

12 Q Let me just finish. I mean, in other words, if you took Behe  
 13 away and you took Dembski away and they'd never written, and  
 14 nobody had replaced them, would you have any basis then to  
 15 say Intelligent Design has developed in a way that  
 16 constitutes science?

17 MR. GILLEN: Object to form.

18 THE WITNESS: Well, let's see. First of all, we haven't  
 19 talked about Meyer's work which I'm not intimately familiar  
 20 with. But of course there is that sort of strand there as  
 21 well. But I take it you're after -- your -- the thrust of  
 22 your question is that, you know, if you took away these three  
 23 guys or four guys, or how many, you know, finite number of  
 24 guys, would there be any Intelligent Design? I actually  
 25 think -- see, we've so far been discussing this issue of

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 1 kind of, you know, proto-scientific development. Like  
 2 Paley's argument and so forth, and then tries to put it in a  
 3 more scientifically rigorous form like Dembski's done with  
 4 the explanatory filter. And so you do see a development.  
 5 And you also -- and in the way in which the critics treat it.  
 6 So when the philosophers are debating with Dembski, they  
 7 explicitly say, let's put aside his religious assumptions and  
 8 just deal with his arguments on their face. And the kinds of  
 9 arguments they give, first of all, it's published in their  
 10 main peer reviewed journals, in the Glossary of Science in  
 11 the United States. And he responds there. And it's an  
 12 argument that, you know, they could be having with anyone,  
 13 right, who they would normally respect as being scientific  
 14 and so forth. And Michael Ruse, when he writes, I mean, he's  
 15 an interesting guy to have watched over the last 20 years  
 16 since he's writing a book a year on this kind of stuff.

17 And, you know, the -- you know, the Darwin End Design, a  
 18 book that came out in 2003, there he quite explicitly, when  
 19 he discusses Intelligent Design, he makes the connections  
 20 with the natural theology tradition, he treats it in a very  
 21 kind of respectful manner, and in fact he says that, you  
 22 know, these views that these guys are putting forward these  
 23 days could be easily confused with kind of respectable  
 24 scientific views. And that's something you wouldn't -- they  
 25 wouldn't have said 20 years ago about creation science. You

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 1 Intelligent Design as something that is mutually exclusive  
 2 from evolutionary theory. And I understand that because of  
 3 the nature of the case we're talking about. But within  
 4 evolutionary theory, within evolutionary theorists, there  
 5 has -- there have been tendencies in that direction as well.  
 6 So it's not like Intelligent Design is something completely  
 7 alien to people who we would normally consider to be  
 8 contributors to evolutionary theory. I mean, you actually  
 9 have people, I cite Theodosius Dobzhansky, for example, who's a  
 10 one of the founders of the Neo-Darwinian synthesis who's a  
 11 geneticist, who quite obviously took Intelligent Design  
 12 seriously and didn't think of it as being exclusive of  
 13 evolution. Right. So -- so -- so the thing is that what  
 14 would be -- yeah. I mean, there is a sense in which the  
 15 Intelligent Design movement as it's understood today, you  
 16 know, as this is kind of American phenomena defined by these  
 17 guys who made the assumptions in association with the  
 18 Discovery Institute, I mean, there's a sociological way of  
 19 defining them. Yeah, maybe that form wouldn't exist. But  
 20 the general ideas and stuff, I mean, are still lurking there  
 21 in evolutionary theory. And there is stuff that these people  
 22 have already developed that could be taken, you see. I mean,  
 23 so -- I'm sorry. I don't know if that answers your question.  
 24 But I was trying to sort of --

25 BY MR. ROTHSCHILD, CONTINUING:

1 Q I want to go through some of the assertions in your report.  
 2 If you could turn to page one, you have a section titled at  
 3 the bottom of the page is evolution fact or theory?  
 4 A Uh-huh.

5 Q ~~Am I understanding the text that follows correctly, your~~  
 6 ~~view is that evolution is both a fact and a theory; is that~~  
 7 ~~so?~~

8 A ~~So?~~

9 Q Okay. And when you use the word theory for a scientific  
 10 proposition, do you have a specific definition in mind?  
 11 A Yeah. I basically mean an explanatory conception of a range  
 12 of phenomenon. And also that could serve as the basis for a  
 13 research program, for an empirical research program.

14 MR. ROTHSCHILD: I'm going to mark as Fuller Exhibit 2  
 15 the ~~the Constitution cited in this writing~~

16 (Marked for identification Fuller Deposition Exhibit  
 17 No. 3)

18 THE WITNESS: Oh, thanks.

19 BY MR. ROTHSCHILD, CONTINUING:

20 Q ~~May I call your attention to page seven of the Complaint and look at~~  
 21 ~~paragraph 13.~~

22 A ~~No.~~

23 Q ~~You are in the second line of that paragraph, we have a~~  
 24 ~~definition from the National Academy of Sciences - Science~~  
 25 ~~for the word theory?~~

1 because there is no research program generated.

2 Q What about creation science?

3 MR. GILLEN: Object to form.

4 BY MR. ROTHSCHILD, CONTINUING:

5 Q Does that qualify as -

6 A No. Not in the - not in the terms that we were talking  
 7 about earlier.

8 Q Okay. Now, ~~Now, if we use the National Academy of Sciences~~  
 9 ~~definition, does evolution qualify as a scientific theory?~~

10 A ~~No.~~

11 Q Okay. Does Intelligent Design?

12 A ~~No.~~

13 Q ~~No.~~

14 A Well, because it's not well-substantiated. And I think,  
 15 just probably why they define theory this way.

16 Q Okay.

17 A Because it sort of is prejudicial - it's sort of - it's  
 18 quite biased toward a theory that's been around for a long  
 19 time and has been allowed to in fact incorporate lots of  
 20 facts, laws, inferences and so forth, right? It's very  
 21 biased towards an established theory.

22 Q Would you agree that the definition in the National  
 23 Academy - that the National Academy of Sciences uses is more  
 24 rigorous or difficult to satisfy than the definition you use?

25 A No. I think they're quite - they're different kinds of

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1 A Yes.

2 Q ~~In science, a well-substantiated empirical proposition~~  
 3 ~~is called a theory. So you can have a hypothesis, a theory,~~  
 4 ~~and law. And based upon that, do you see that?~~

5 A ~~No.~~

6 Q Is that a definition of scientific theory that you're  
 7 comfortable with?

8 A Well, I don't think it has to be well-substantiated, and I  
 9 think it has to provide the basis for a research program. I  
 10 mean, this is too static a definition.

11 Q So you don't accept this definition?

12 A I don't think it's sufficient.

13 Q Okay. You would add the content that it has to assert -  
 14 create the basis for a research program?

15 A That's correct.

16 Q And you would remove the word well-substantiated?

17 A That's right. I don't think that's necessary.

18 Q Okay. Using your definition of theory, scientific theory,  
 19 does the theory of evolution qualify?

20 A Yes.

21 Q Does the theory of Intelligent Design qualify?

22 A Yes.

23 Q Does creationism qualify?

24 A No, because - well, not creationism in that six day sense we  
 25 were talking about earlier. Presumably that's what you mean

1 definitions in a way. I don't - I don't see it as more  
 2 rigorous necessarily. Let's put it this way. Their  
 3 definition wouldn't necessarily encourage you to continue  
 4 doing science.

5 Q Okay. Would you agree that your definition incorporates  
 6 scientific propositions that are early in their - very early  
 7 in their development, whereas the National Academy of  
 8 Sciences' definition requires that the concept be much more  
 9 developed?

10 A Correct. So by this definition, the only thing that counts  
 11 as a theory is a developed theory, by the National Academy of  
 12 Sciences. That strikes me as very strange.

13 Q If you go to the top of page two - and let me just -  
 14 actually, I'm going to read to you, and I'm sorry, I don't  
 15 have an extra copy - or maybe, actually -

16 MR. GILLEN: Want me to make one?

17 MR. ROTHSCHILD: No, actually, I may have it. Mark this  
 18 as 3.

19 (Marked for identification Fuller Deposition Exhibit  
 20 No. 3)

21 BY MR. ROTHSCHILD, CONTINUING:

22 Q Fuller - the document I've marked as Fuller Exhibit 3 is a  
 23 press release issued by the Dover Area School District. And  
 24 you see at the bottom that there is a statement that the  
 25 school district is going to read to students in biology

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25 (Pages 94 to 97)

1 class; do you see that?

2 A Yes.

3 Q Okay. And at the bottom of the page the statement states, a  
4 theory is defined as a well tested explanation that unifies a  
5 broad range of observations. Do you see that?

6 A Yes.

7 Q Do you accept that as a proper definition of a scientific  
8 theory?

9 A I think I would replace well tested with testable.

10 Q Okay. Using your amended definition, is evolution a theory?

11 A Yes.

12 Q Is Intelligent Design?

13 A Yes.

14 Q Okay. Using the definition without your amendment, is  
15 evolution a theory?

16 A Yes.

17 Q Okay. Is Intelligent Design?

18 A I don't know.

19 Q And is the criteria that calls you to question that the issue  
20 of well tested?

21 A Yes.

22 Q Okay. Do you -- and you don't have -- you don't know whether  
23 Intelligent Design can be characterized as well tested?

24 A Well, it certainly has been tested, you see. And I think --  
25 and it is testable. But again, it's this issue of the age of

98 1 the tests that are undergone in science have that quite  
2 specific character saying I've got a fact, it shows that this  
3 is right or this is wrong. It's only under very kind of  
4 controlled conditions you can normally do that sort of thing.  
5 Otherwise, these tests are of a much more indirect kind,  
6 where you're providing challenges that you think the theory  
7 needs to answer to.

8 Q Okay. So a couple questions there. Are you aware of any way  
9 in which Intelligent Design has been empirically tested?

10 MR. GILLEN: Objection to form.

11 THE WITNESS: I'm sorry, I'm sorry.

12 case.

13 BY MR. ROTHSCHILD, CONTINUING:

14 Q Okay. You -- I think you're suggesting it has been  
15 conceptually tested by the -- has been conceptually tested by  
16 the challenges raised by critics?

17 A Yes, yes.

18 Q I'm a little troubled by this idea that a concept would  
19 attain some scientific pedigree as a tested proposition  
20 solely by the fact that opposing scientists have found  
21 problems with it. I mean, how does that -- how does that  
22 advance a scientific concept if all that happens is the  
23 proponents of the idea raise a concept and, you know, a bunch  
24 of other scientists demonstrate what's conceptually wrong  
25 with it?

99 1 the theory because well tested suggests, you know, it's been  
2 around a while, and it's been tested lots of times in lots of  
3 different ways. And I don't think that's true, you see. But  
4 that's not necessarily any fault of the theory itself, you  
5 see.

6 Q How has Intelligent Design been tested at all?

7 A Well, I think we were just talking about Dembski, for  
8 example, right. And we were talking about these  
9 counterexamples to his definition of the explanatory filter.  
10 Those counterexamples is a kind of testing at a conceptual  
11 level, right, because what he's doing is putting forward a  
12 mathematical formalization of a concept, and here a  
13 philosopher is coming up with counterexamples showing how it  
14 doesn't -- how it doesn't apply. So there's a test, right?  
15 Also, I guess in the case of Behe, trying to come up with  
16 alternative explanations. You know, so Behe says the only  
17 way you can explain the way the cell maintains its stability  
18 is through irreducible complexity, and some evolutionists  
19 say, no, we've got an alternative explanation. Right. So in  
20 a sense, the exclusiveness of the explanation being proposed  
21 has been challenged. These are tests, right? I mean,  
22 they're -- they're not necessarily tests in the sense of  
23 coming up with a fact that shows that something is  
24 definitively right and wrong, but then in science, you know,  
25 relatively little is actually -- you know, relatively few of

101 1 A Well, first of all, the fact that they bother doing it at  
2 all, and the terms in which they do it is familiar from other  
3 things that they are considering in their science, right.  
4 So, I mean, this is where people like Dembski and Behe are  
5 really making advances over creation science, if you're  
6 making that kind of comparison. Namely that they're now  
7 being answered in the coin of science. Okay. And in a way,  
8 they're being answered in ways that sort of brings their  
9 concerns close together to the concerns that are already  
10 taking place, you know, in other fields of science. So it  
11 seems to me that this is an implicit acknowledgment of  
12 bringing them in the scientific ambit. And I don't think we  
13 should get too fussy about empirical testing, because as more  
14 and more science gets done on computers and other kinds of  
15 simulation devices, the idea of there being direct empirical  
16 tests of things, you know, is going to be increasingly  
17 limited. I think these kinds of things that we're seeing  
18 here is going to be much more indicative of the kind of  
19 science that's going to happen in the future, where you have  
20 alternative computer models that can generate the same sort  
21 of phenomena that you can say can only be generated one way.  
22 And the design guys like to play around with that. And it  
23 seems to me a lot of science is heading in that direction.  
24 Q I mean, see, here's my problem. You know, I can come up with  
25 the assertion that all of biological life is made of

1 since I haven't read the pieces, I'm only sort of guessing  
 2 what I imagine the research strategy is. But I take it that  
 3 he's basically trying to show that there's a sense in which  
 4 there are certain kinds of phenomena that evolutionary  
 5 accounts cannot explain, and so whenever an evolutionary  
 6 account is purported, he wants to say, well, in fact they  
 7 can't explain everything and that this other account with  
 8 irreducible complexity, we'll be able to do that. And so  
 9 it's a sort of battle of dueling accounts for various natural  
 10 phenomena to get presented. I take it that's kind of -- and  
 11 if that is in fact what he's doing, then that would be  
 12 scientific. But I'm just -- again, I haven't read the  
 13 articles.

14 Q So you don't know?

15 A I don't know. But I do think, you know, I mean, I think it's  
 16 reasonable to suppose that that's what he's doing, given that  
 17 he's publishing in the area and so forth.

18 Q But you're speculating on what the --

19 A Yes, I'm speculating.

20 Q Okay. And now going to Dr. Dembski, I think what you're  
 21 saying is he came up with this concept of the explanatory  
 22 explanatory filter, there's been some criticism of it, he has  
 23 adjusted his definition; is that fair?

24 A Yeah, I think that's right. I mean, so he has been  
 25 continuing along with the same trajectory, trying to take

1 Q I mean, again, I'm going to come back to this point I think I  
 2 was trying to make at the -- this afternoon. That you're  
 3 equating the presence of criticism with testability is that  
 4 a -- I mean, am I --

5 A That's --

6 MR. GILLEN: Object to form.

7 THE WITNESS: Well, that's -- that's basically correct.  
 8 Yes. Yes, that's right, because I think -- I want to move  
 9 away from sort of the stereotyping of testability as somehow  
 10 coming up with some sort of empirically precise prediction  
 11 let's say during an experiment, because, I mean, that's --  
 12 that's a kind of classic paradigm case of how we talk about  
 13 scientific testability, but it's not necessarily  
 14 representative of all the forms of testability that are used  
 15 in science.

16 BY MR. ROTHSCHILD, CONTINUING:

17 Q Right. And as far as I can tell, the only form of  
 18 testability that you have identified for these Intelligent  
 19 Design propositions is the fact that they are susceptible to  
 20 criticism?

21 MR. GILLEN: Objection to form.

22 THE WITNESS: Well, I mean, you make it sound like  
 23 that's mere. I'm not sure what the spirit is in which you're  
 24 saying criticism. I mean, first of all, the criticism  
 25 isn't -- the criticism comes in rather specific form, right?

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 1 into account the criticism. I think that that's basically --  
 2 and that's not surprising.

3 Q Okay. And can you explain what he originated with and how  
 4 it's changed?

5 A Well, I mean, in terms of what he originated with, I think he  
 6 originally sort of set up something like a, you might say a  
 7 menu by which you make the inference that something is design  
 8 based, and who you've managed to say that it cannot be  
 9 explained by either strict physical regularity or by chance  
 10 occurrence. And he listed some conditions one would follow,  
 11 and then people brought up counterexamples to this. And he  
 12 has adjusted the theory to be able to deal with those  
 13 counterexamples. I cannot say whether he's dealt with it  
 14 sufficiently that he's going to fend off all counterexamples  
 15 in the future. But he is continuing along the same lines,  
 16 only a corrected version of it.

17 Q And does this correction fit your definition of a research  
 18 trajectory where more of Intelligent Design's claims are made  
 19 testable?

20 A Well, yes, in the sense that I think it, you know, it does  
 21 open up this field to critics in the future to -- because  
 22 he's still sticking with the same method largely, right, so  
 23 people are in a sense getting used to the way he operates.  
 24 And so it should make it easier in the future to criticize  
 25 him, I would think so.

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 1 Namely, coming up with counterexamples or coming up with  
 2 counter models in the case of Behe, right, which in effect  
 3 you know, bring forward various kinds of other considerations  
 4 that need to be taken into account. So it's -- you know, the  
 5 word criticism shouldn't be reduced to something like  
 6 carpeting or something, you know, as if, you know, all's  
 7 they're doing is, you know, treating, you know, just sort of  
 8 plugging holes. They're in fact engaging with it, right, in  
 9 ways that forced Behe and Dembski to sort of, you know,  
 10 rethink -- and to varying degrees, what exactly, you know,  
 11 how they should proceed after that. So it's not a trivial  
 12 thing to do.

13 BY MR. ROTHSCHILD, CONTINUING:

14 Q Well, and I don't mean to treat it as trivial. But I do --  
 15 I'm trying to confirm that in terms of how Behe's and  
 16 Dembski's work has been rendered testable, the only real life  
 17 examples of that that you are aware of is that the phenomenon  
 18 that it's -- they have elicited criticism; is that fair?

19 A Yes. But, I mean, I'm not sure in the normal run of science  
 20 what else you'd be looking for given that most scientific  
 21 claims aren't directly testable in that classic, you know,  
 22 empirical prediction kind of way that we talk about in  
 23 philosophy of science 101. Okay. So I'm not sure what the  
 24 alternative that's in the back of your mind would be to  
 25 what's happened to them, given the nature of the kinds of

1 A Yes, yes. That's right.  
 2 Q Okay. And you also -- you used the term in your report  
 3 metaphysical naturalism?  
 4 A Yes.  
 5 Q What do you mean by that?  
 6 A Well, what methodological naturalism is in practice.  
 7 Q And explain what you mean by that.  
 8 A Well, I think -- see, naturalism is not an innocent view.  
 9 Right. I mean, one of the consequences of methodological  
 10 naturalism is that you sort of presuppose the world has to be  
 11 a certain way in order for science to take place. So you  
 12 restrict yourself to certain kinds of, you know, phenomena  
 13 and ways of looking at the phenomena and close yourself off  
 14 to other possibilities. So you close yourself off to  
 15 Intelligent Design. And in the past, this kind of naturalism  
 16 closed people off to looking at things like action at a  
 17 distance with regard to gravitation attraction in Newtonian  
 18 mechanics. And in -- even arguably, people say that if you  
 19 really took this kind of methodological naturalism seriously,  
 20 you wouldn't be able to make much sense of quantum mechanics  
 21 as it currently is being made sense of, because that in a  
 22 sense spends at least certain kinds of common sensical  
 23 notions of physical causation that are normally seen as  
 24 rooted in methodological naturalism. So in that sense,  
 25 there's a kind of metaphysics that's associated with it. It

1 words, I don't think it's so -- you know. I don't think, you  
 2 know, you can't -- I don't really know if there's a moment in  
 3 Intelligent Design work where you say, ah, you know, you're  
 4 now entering the supernatural here. You now need a  
 5 supernatural explanation. I mean, that's kind of more a term  
 6 a critic would use of it.

7 Q Well, let me -- when --  
 8 A So is Intelligent Design supernatural? Right? I mean -- I  
 9 mean, certainly when the arguments are being conducted about  
 10 it, you know, let's say to Dembski's version, the word  
 11 supernatural doesn't have to arise, but it's quite clear the  
 12 kinds of inferences he's making do take us beyond what  
 13 normally is accepted within naturalistic forms of science.  
 14 Q When we talk about Intelligent Design, do you understand  
 15 Intelligent Design to take a position on who the intelligent  
 16 designer is?  
 17 A Not necessarily, though, I mean, historically, of course, a  
 18 certain kind of monotheistic conception of God has been  
 19 behind it. But I don't think the way the theories have been  
 20 developed recently you'd really require any kind of view on  
 21 this matter, that one could be agnostic. Yeah.  
 22 Q Okay. And do you have an understanding of whether  
 23 Intelligent Design takes a position on what the capabilities  
 24 or powers of the Intelligent Design is -- designer is?  
 25 A Well, this is, again, I don't think there's any kind of --

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 1 closes you off to appreciating certain kinds of phenomena.  
 2 So in a sense, calling it methodological is a bit coy.  
 3 That's what I would say. I'm using the term because that's  
 4 the term Pennock, I believe, introduces. I myself would see  
 5 naturalism as a metaphysical position.  
 6 Q So to you, methodological naturalism and metaphysical  
 7 naturalism or philosophical naturalism aren't really  
 8 distinct --  
 9 A That's right.  
 10 Q -- concepts?  
 11 A That's correct.  
 12 Q At -- certainly at the end of your report, and I think  
 13 elsewhere, you say that ID rejects naturalism and is  
 14 committed to supernaturalism, right?  
 15 A Well, I think if you're going to take that kind of  
 16 distinction seriously, because I mean, the point I made about  
 17 the naturalism/supernatural distinction is that it's a  
 18 distinction created by naturalists, right, who in effect --  
 19 who in effect say, look, these people aren't just considering  
 20 sort of the normal material world in which things operate,  
 21 but they also think there's this other stuff out there,  
 22 Intelligent Design or spirits or something like this. And --  
 23 and so that's the supernatural realm. I think actually my  
 24 view about what Intelligent Design people are doing is  
 25 actually kind of blurring the boundary more. So in other

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 1 MR. GILLEN: Object to form.  
 2 THE WITNESS: I don't think there's any kind of uniform  
 3 view on this matter. And in that respect, it's very much  
 4 led -- I mean, this respect -- you know. There's a sense in  
 5 which, look, the intelligent designer in a sense has to be  
 6 intelligent enough to produce, you know, a cell, let's say,  
 7 that has some kind of organic -- you know, stability over  
 8 many different environmental changes. So it has to be that  
 9 powerful or that intelligent. But does it have -- but it  
 10 doesn't have to be infinitely powerful or intelligent. So in  
 11 that respect, it is not committed to the fully robust notions  
 12 of the divine creator that have been associated with the  
 13 Judeo-Christian tradition. Right. You could actually --  
 14 it's quite compatible with a much more restricted sense of  
 15 intelligent designer.

16 BY MR. ROTHSCHILD, CONTINUING:  
 17 Q Do you understand the intelligent designer, its proponents to  
 18 have provided any description of what capabilities the  
 19 intelligent designer has or would need to have to do the  
 20 things that they say it has done?

21 MR. GILLEN: Object to form.  
 22 THE WITNESS: Well, it all depends how you -- I mean  
 23 look. There's a sense in which -- one of the reasons why  
 24 Intelligent Design has been able to be critically discussed  
 25 by other scientists and philosophers has been because they

1 including to the incorporation of religiously inspired  
 2 doctrines, for example, Intelligent Design theory, a/k/a  
 3 creationism into mainstream science education. Do you see  
 4 that?

5 A Uh-huh, uh-huh.

6 Q And that's consistent with what you told me today, which is  
 7 that Intelligent Design theory is a form of creationism?

8 MR. GILLEN: Object to form.

9 THE WITNESS: But it's -- no. But it's not all of  
 10 creationism, and it's in fact the part of creationism that  
 11 gets taken into science. So, I mean, I mean, obviously, I'm  
 12 just -- because in the time that this piece was written,  
 13 right, so this was written in 1998, Intelligent Design theory  
 14 wasn't that widely used as an expression. So I put the  
 15 creationism in there so people kind of have a sense of what  
 16 exactly Intelligent Design is without me having to give a  
 17 whole song and dance about it, because I'm just using it as  
 18 an example. But I didn't mean to say that everything about  
 19 Intelligent Design corresponds to everything about  
 20 creationism.

21 BY MR. ROTHSCHILD, CONTINUING:

22 Q But you -- what do you understand the acronym a/k/a to mean?

23 A Yeah, also known as.

24 Q Okay. So --

25 A Right. But in 1998, okay, we're talking -- you know, when

1 is now. Had I written this thing today, I would not put it  
 2 this way. I mean, these things are time sensitive. In that  
 3 respect, Intelligent Design has made progress fairly rapidly  
 4 because in the course of whatever this is, seven years since  
 5 this piece has been published, right, the status of this  
 6 thing has changed somewhat.

7 BY MR. ROTHSCHILD, CONTINUING:

8 Q And in what respect?

9 A Well, in the sense that I think it's more easily  
 10 disentangleable. So like even when you were talking about  
 11 Intelligent Design theory, you were able to nail it down to  
 12 few people, right, who are in a way separable from the  
 13 general creation movement. And I think that -- you know.  
 14 And I think that that's because of all the, you know, not  
 15 just the publication of the books, but also the way in which  
 16 the discussion of Intelligent Design has kind of moved off in  
 17 its own space. So in a sense, you can talk all about  
 18 Intelligent Design now without bringing in all the other  
 19 schools of creationism, or the six -- you know, the six day  
 20 stuff or any of that.

21 Q But that was not true in 1998?

22 MR. GILLEN: Object to form.

23 THE WITNESS: I think in 1998 these things were much  
 24 more confused.

25 BY MR. ROTHSCHILD, CONTINUING:

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 1 did Dembski's book come out? 1998? I mean -- right? I  
 2 mean, we're talking pretty early before this thing becomes  
 3 really crystallized as something that's separable from all  
 4 these different branches of creationism.

5 Q So you're saying in 1998, Intelligent Design was more similar  
 6 to creationism than it is today?

7 MR. GILLEN: Objection to form.

8 THE WITNESS: I'm not actually -- I'm not actually  
 9 making any commitment to that in this parenthesis. I'm just  
 10 using it as a marker so that people can understand what  
 11 Intelligent Design -- since Intelligent Design theory was an  
 12 ascendant notion, what exactly -- how -- you know, in what  
 13 conceptual space one should put that when thinking about what  
 14 religiously inspired doctrines mean.

15 BY MR. ROTHSCHILD, CONTINUING:

16 Q Okay. And Intelligent Design -- you were characterizing  
 17 Intelligent Design theory as a religiously inspired doctrine?

18 A Well, it is, and to a certain extent is religiously inspired.  
 19 But to be religiously inspired is not to be religion.

20 Q Okay. And -- and you were equating it with creationism?

21 MR. GILLEN: Objection to form.

22 THE WITNESS: I wasn't equating it. I wasn't equating  
 23 it. All right. I mean, I was just -- I was using it as a  
 24 kind of -- as a placeholder for it in a period where this  
 25 term Intelligent Design wasn't yet consolidated in the way it

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 1 Q Okay. Confused by who?  
 2 A Well, I just mean just generally speaking.  
 3 Q You for one?  
 4 A Look, I didn't say I was a creationist or Intelligent Design  
 5 theorist. But I do think that -- I do -- I do find -- I have  
 6 found out more about it in the interim, I think it's fair to  
 7 say that I knew less about it back then. Largely because  
 8 there was less of it to know, okay. And I know more about it  
 9 now. But again, this is seven years ago.  
 10 Q Okay. Now, when I asked you about this before, you said  
 11 you'd been following this issue?  
 12 A Not -- I mean, but I never said I was an expert on this. I  
 13 said I was following it, you know, kind of shadowing it.  
 14 That doesn't mean I'm an expert on it.  
 15 Q I mean, you know, these -- Steve, words are pretty hard to  
 16 escape. Religiously inspired doctrine a/k/a creationism.  
 17 And I think -- what I'm trying to understand is, you know,  
 18 what about Intelligent Design caused you to characterize  
 19 it -- characterize it as --  
 20 A Well, because --  
 21 Q -- Creationism at the time?  
 22 A Because all of the response -- look. All of the responses to  
 23 Behe and Dembski and the line of argument that that led --  
 24 led from to the present day happened after this. I mean,  
 25 there is a sense in which, you know, if you want to -- if you



1 Q No, no, I understand. But what I'm saying, you -- you  
 2 made a point which I think I agree with, which is, you know  
 3 Behe's, you know, effectively eliminated -- saying he's eliminated  
 4 one possibility, but there might be other hypotheses, right?  
 5 A Yes. Demb - Dembski has a similar problem, actually.  
 6 Q Okay. Okay. So both of them have this problem, right?  
 7 A Uh-huh.  
 8 Q Now?  
 9 A Yes, yes.

10 Q Okay. But then I -- even granted your point, which I do, I'm  
 11 still troubled by the idea that even if you could eliminate  
 12 all the, for example, natural hypotheses that have been  
 13 asserted, one could make a positive case for action by an  
 14 intelligent designer. And I'm trying to understand how that  
 15 follows, which I -- I -- I think is the conclusory  
 16 proposition?  
 17 A Yes. I mean, yes. It doesn't follow. You're absolutely  
 18 right. But typically what happens in these kinds of  
 19 arguments, right, is that the Intelligent Design person, as  
 20 the person who's always facing evolutionary challenge, has  
 21 make the Intelligent Design argument more specified, right?  
 22 So what happens then is that the Intelligent Design argument  
 23 becomes more precise. So I think what -- I don't see it as  
 24 an inherent problem. It just means that there's -- there's  
 25 never going to be a decisive moment where the Intelligent

1 by denying what -- I mean, if you got -- if you got random  
 2 mutation and natural selection as one hypotheses, right, then  
 3 the other -- you know, the other hypothesis could be one  
 4 where there is some kind of plan. And since the cell had --  
 5 you know, the cell is designed the way it is so that it could  
 6 survive many different kinds of changes in the natural  
 7 selection environment. That's not -- that's not an  
 8 incomprehensible notion, right? I mean, it's just to make  
 9 that specific so you could actually test whether it's, you  
 10 know, it's -- it's true in a certain situation, I think  
 11 that's the problem. It's not really specified enough. But,  
 12 you know, I mean -- let me make a follow up point to this.  
 13 Evolutionists and Intelligent Design people can go about  
 14 criticizing each other and that's perfectly fine and that's  
 15 very appropriate in science. But there is also -- you know,  
 16 but as it were, the -- the -- the relative scientific status  
 17 of the theories aren't just determined by those clashes and  
 18 what happens in those clashes. But it's also determined by,  
 19 as it were, how they take it home to develop their own  
 20 theories independently. So if we take seriously the idea  
 21 that Intelligent Design theory is in a way trying to scope  
 22 out the phenomena of reality somewhat differently than the  
 23 evolutionists are, so it includes cosmological issues and  
 24 maybe supernatural issues, even, in a way in which evolution  
 25 rules out of court, right, then what you're also looking at

1 Design argument wins by default by seeing off evolutionary  
 2 challenges. That's all it means.  
 3 Q But I --  
 4 A It doesn't mean it ever -- at no point does it ever get shown  
 5 to be wrong. It -- what -- it shows it hasn't eliminated  
 6 alternatives.  
 7 Q And never would?  
 8 A That's entirely --

9 MR. GILLEN: Object to form.  
 10 THE WITNESS: I mean, that's entirely possible. And  
 11 that's why some people object to the idea of inference to the  
 12 best explanation as being a method in science, wherein a  
 13 sense, right, the question is always open as long as there  
 14 are alternative hypotheses available. People who believe in  
 15 the inference to the best explanation do believe that all the  
 16 opponents are eventually seen off.

17 BY MR. ROTHSCHILD, CONTINUING:

18 Q All right. And -- and -- and -- what -- and I -- but I --  
 19 and I'm still trying to get to the point, we're talking about  
 20 inference to the best explanation. But I don't see how  
 21 Intelligent Design is unexplanation at -- what the -- what  
 22 the affirmative case is for Intelligent Design even being one  
 23 of the alternatives?  
 24 A Well, I'm not sure. I mean, it seems to me that the  
 25 possibility of space for Intelligent Design is opened up just

1 is not how -- not only how these two theories relate to each  
 2 other, but also how they develop in light of the criticism in  
 3 their own terms. Do they go to the places they're trying to  
 4 go to with regard to explanation and so forth? And so when  
 5 somebody like Meyer, let's say, wants to have this kind of  
 6 covering information theory as the metatheory of Intelligent  
 7 Design, well, that's nothing -- you know, that's -- you know,  
 8 evolutionists think that's just weird, right? But then he's  
 9 trying to do something different. He's not trying to do what  
 10 the evolutionists are doing. So while they do conflict over  
 11 certain areas like how do you explain the cell's stability,  
 12 the overall goals of the research program are somewhat  
 13 different, and so there are different kinds of concerns that  
 14 they will then want to take forward when they develop their  
 15 theories.

16 Q Go to the next page of the article, page 540. You invoke the  
 17 well-known and highly regarded Fuller's Fairness Rule, which  
 18 is if you appeal to metaphysical explanations at all, you  
 19 must permit a plurality of them. And you also -- you go on  
 20 to say virtually any metaphysical hypothesis can be  
 21 maintained in the face of any negative evidence. Explain  
 22 what's going on here.

23 A Okay. Well, this is, in a sense, kind of the -- it's in --  
 24 it's in a way trying to find a useful place for metaphysics  
 25 and science. Okay. And the idea here being that when

1 their hand rhetorically. What do you mean by that?  
 2 A This is -- yeah. I know -- I recall saying this. I just  
 3 can't quite find where you're looking at.  
 4 Q It's the second full paragraph.  
 5 A Second full paragraph, okay.  
 6 Q Towards the bottom of the page.  
 7 A Right. I mean, the point here being that -- that if ID is  
 8 able to provide a scientific explanation for something, that  
 9 doesn't rule out the evolutionary one. But there's a  
 10 tendency to sort of see these things, I think on both sides,  
 11 in mutually exclusive terms. So if we can provide an  
 12 explanation and you guys -- and you guys can't then, you  
 13 know, in principle, we're the only ones who can. So, I mean,  
 14 I do think that there's a tendency on both sides to think  
 15 that the two are sort of mutually exclusive.  
 16 Q And you say then epistemological legitimacy of ID doesn't  
 17 require showing that evolution cannot provide a credible --  
 18 A Right, right.  
 19 Q -- alternative framework, just requires showing that ID has  
 20 an explanatory framework that can be the basis for a body of  
 21 scientific research?  
 22 A That's right. I was making that point earlier with regard to  
 23 the fact that you just can't judge the legitimacy of ID just  
 24 purely in terms of how it faces up against evolution. You  
 25 have to see how it is able to develop the stuff in terms of

1 A No, no, it has -- no, it isn't that. I mean, it's to say  
 2 that the cell has to have certain kind of components in place  
 3 in order to have the stability it has so that it's able to  
 4 survive all the various changes in the environment. Now, it  
 5 seems to me that that project, if it were fully executed,  
 6 could be done independently of anything going on in  
 7 evolutionary theory. I mean -- I mean, so in that respect,  
 8 Intelligent Design could be pursued as an independent  
 9 program.  
 10 Q So if -- if Behe simply showed empirical evidence of the cell  
 11 maintaining stability --  
 12 A Well, this is what I would say. I mean, I wouldn't do it  
 13 that way. I would actually go to the computer simulation and  
 14 try to model the cell, right, and actually try to come up  
 15 with the parameters whose interactions end up producing a  
 16 cell, right, a virtual cell, simulation of a cell, right,  
 17 that is able then to maintain its stability in the face of  
 18 the kinds of environmental changes that we normally think of  
 19 cells as being able to survive in. Right. So if you were  
 20 able to do that, and so he could then say, look, I've been  
 21 able to program a cell, and you can do it this way, and  
 22 there's not going to be an alternative evolutionary  
 23 explanation for that. And as it were, then throw the  
 24 gauntlet down and say, you come up with something that isn't  
 25 as designed as this, that in some sense has a kind of random

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1 its own framework.  
 2 Q And what is your understanding of the explanatory framework  
 3 ID offers other than the assertion that evolution doesn't  
 4 provide a credible framework?  
 5 A Well, I mean, this is where the explanatory filter and the  
 6 irreducibly complexity notions get mobilized as a way of  
 7 suggesting research avenues. I mean, that's -- that's the  
 8 basic -- that's what I mean by the explanatory framework,  
 9 that within which then research can be done.  
 10 Q But isn't irreducible complexity nothing more than the  
 11 assertion that the evolutionary framework doesn't work?  
 12 A No, it isn't more than that, I mean, because the issue then  
 13 depends -- determines -- it turns on how you actually develop  
 14 this thesis, right. And presumably, what you want to do with  
 15 the irreducible complexity is to identify as it were the  
 16 parameters that -- all of which have to be in place in order  
 17 to sell -- in order for the sell to have its stability the  
 18 way it does, and that there's no way of removing any of those  
 19 parameters without in fact undermining the stability of the  
 20 cell, and that evolution cannot provide an alternative to  
 21 that. So it seems that there is a self-contained research  
 22 program that perhaps has not been fully executed but is  
 23 suggested by the idea.  
 24 Q And I'm not sure what that is besides the fact that evolution  
 25 or natural selection isn't an adequate explanation?

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1 element or something, and you still get this kind of  
 2 stability over time. I don't think he's done that yet, but  
 3 it seems to me it could be done. I mean, it'd probably be  
 4 very difficult, but not out of the question. I mean, I'll  
 5 tell you one advan -- one -- one thing about Intelligent  
 6 Design that I think is worth pointing out is because you  
 7 don't actually have departments and schools and disciplines  
 8 of Intelligent Design, there's not a ready-made way of  
 9 training people in the kinds of skills that'll be necessary  
 10 to sort of carry out a lot of the details of this project. I  
 11 mean, that's a real problem, I think, that they face  
 12 sociologically at the moment because, you know, if you've  
 13 only got a few guys kind of putting forward bold hypotheses  
 14 and trying to do very sort of striking bits of forays, you  
 15 know, challenging evolutionists, you can only go so far. You  
 16 really need to train generations of people. In fact, that --  
 17 you know, that's how any science survives. And it was only  
 18 starting in the 1930's and '40's that you start to be able to  
 19 train biologists who have a sufficient range of skills to  
 20 actually be able to contribute to Neo-Darwinism as this  
 21 fully-fledged program that we see it today. So, you know, in  
 22 a way, they do have a sort of sociological disadvantage here.  
 23 They're basically trying to cover a lot of the waterfront all  
 24 by themselves, and of course they don't have all the skills  
 25 to do it. This is why they would need a school of people to

1 Q Uh-huh. You refer, I think at footnote 11 to a book by --  
 2 A Oh, yeah.  
 3 Q -- Thomas Woodward, Doubts About Darwin.  
 4 A Yes.  
 5 Q What is that book about?  
 6 A Okay. This was a guy's Ph.D. thesis originally. And what  
 7 is, he basically followed various people around who've been  
 8 debating the Intelligent Design/Darwin issue publicly. You  
 9 know, so when Phillip Johnson and Stephen J. Gould were  
 10 debating, I mean, he'd follow all these people across the  
 11 country. And he's basically charting sort of the development  
 12 and the arguments that are taking place. And one of the  
 13 points that he makes is that in fact Intelligent Design  
 14 people kind of have evolved, you might say, as they've  
 15 interacted with scientists and they've made more  
 16 sophisticated arguments and so forth. And so there's been a  
 17 kind of learning curve, you might say, that now makes  
 18 Intelligent Design a much more sophisticated theory through  
 19 the interaction with the scientists. I mean, it's the kind  
 20 of thing, you know, the sort of thing that John Angus  
 21 Campbell kind of says would happen, he sort of documents  
 22 And as a participant observer, which means that he's kind of  
 23 there in the meetings, asks some questions, you know, and  
 24 then writes about it.

25 Q Do you have any relationship with Mr. Woodward?

1 A No, I have not.

2 Q Why not?

3 A Well, I don't -- I guess I just -- I haven't thought I was in  
 4 a particularly persuasive position to convince the natural  
 5 scientists about teaching anything other than what they  
 6 already do. I mean, so it just didn't seem to fall to me to  
 7 do that. I guess that would be the main reason. Also I do  
 8 think there is this issue we keep on going back to about  
 9 what's the appropriate faculty for discussing these matters.  
 10 And that in the case of some of these things, that a  
 11 mathematics or statistics department might be better than a  
 12 chemistry or biology department for a lot of this stuff. So  
 13 I think there's a kind of open question about where exactly  
 14 would you want to be placing the study of this thing.

15 Q Same question applies to the high school level?

16 A Well, the high school level, the science courses are much  
 17 more generic, aren't they? I mean, so -- and also I think  
 18 there's a different purpose as well, because at the high  
 19 school level, there is a sense in which you're trying to seed  
 20 the next generation of scientists potentially. I mean, that  
 21 was something that even your guy, Alters, brought out. And  
 22 that it becomes important then to think about the different  
 23 scientific perspectives in light of that, whereas by the time  
 24 you get to university, people are training to be  
 25 professionals already in a given science. So they're sort of

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1 A Do I have any relationship with him? I did teach this book  
 2 in -- at UCLA when it was still in its proof form. I mean, I  
 3 know -- you know, and I have been in contact with him  
 4 actually because he does derive some kind of methodological  
 5 inspiration from some of my writings in the appendix of the  
 6 book. But I've never taught the man, I've never met him  
 7 personally. By the way, the context I would say where --  
 8 where he is drawing some inspiration from me relates to the  
 9 questions that you were raising earlier about the tributary  
 10 delta stuff, about the idea of broadening out the scientific  
 11 base so that larger numbers of people can have access to  
 12 stuff. That's the kind of thing that he found initially  
 13 attractive, which comes up in this book mine on Thomas Kuhn.

14 Q I think you said very early in our discussion that  
 15 Intelligent Design is not taught as part of the biology  
 16 courses at Warwick University?

17 A That's correct.

18 Q Okay. And --

19 A But we do teach, you know, in this philosophy master's degree  
 20 thing, we do teach it. And so --

21 Q Okay. But I'm correct that it's not part of any of the  
 22 natural sciences curriculum?

23 A No, no.

24 Q Have you ever advocated at the university that Intelligent  
 25 Design be taught as part of the natural sciences curriculum?

1 already engaged in a kind of more technical sort of thing.  
 2 And that's -- it's harder to institutionalize at that level.  
 3 I think it actually would be easier to institutionalize at  
 4 the high school level.

5 Q Wouldn't it make sense at the undergraduate level, to seed  
 6 the next generation of scientists, when the students are --

7 A Well, okay.

8 Q -- sophisticated?

9 A My -- I should explain something. In Britain, you come in  
 10 already specialized. I mean, you see, in America, it's quite  
 11 common for the first year or two of the undergraduate level  
 12 to in a sense be searching around for a major. And so, yes,  
 13 in that context, I think that's a -- that's actually right.  
 14 So I take your point there. But I was thinking about the  
 15 British context, right, where you sort of start  
 16 specializing -- you get admitted into a university in a  
 17 subject. And that's why the degree program is a three year  
 18 rather than a four year program.

19 Q Could you turn to page 11 of your report.

20 A Yeah.

21 Q And at the bottom paragraph, you talk -- you talk about most  
 22 philosophers having resisted the charms of naturalism.

23 A Yes.

24 Q And that's -- I take it you're distinguishing them from  
 25 scientists who, to a large extent, have succumbed to the